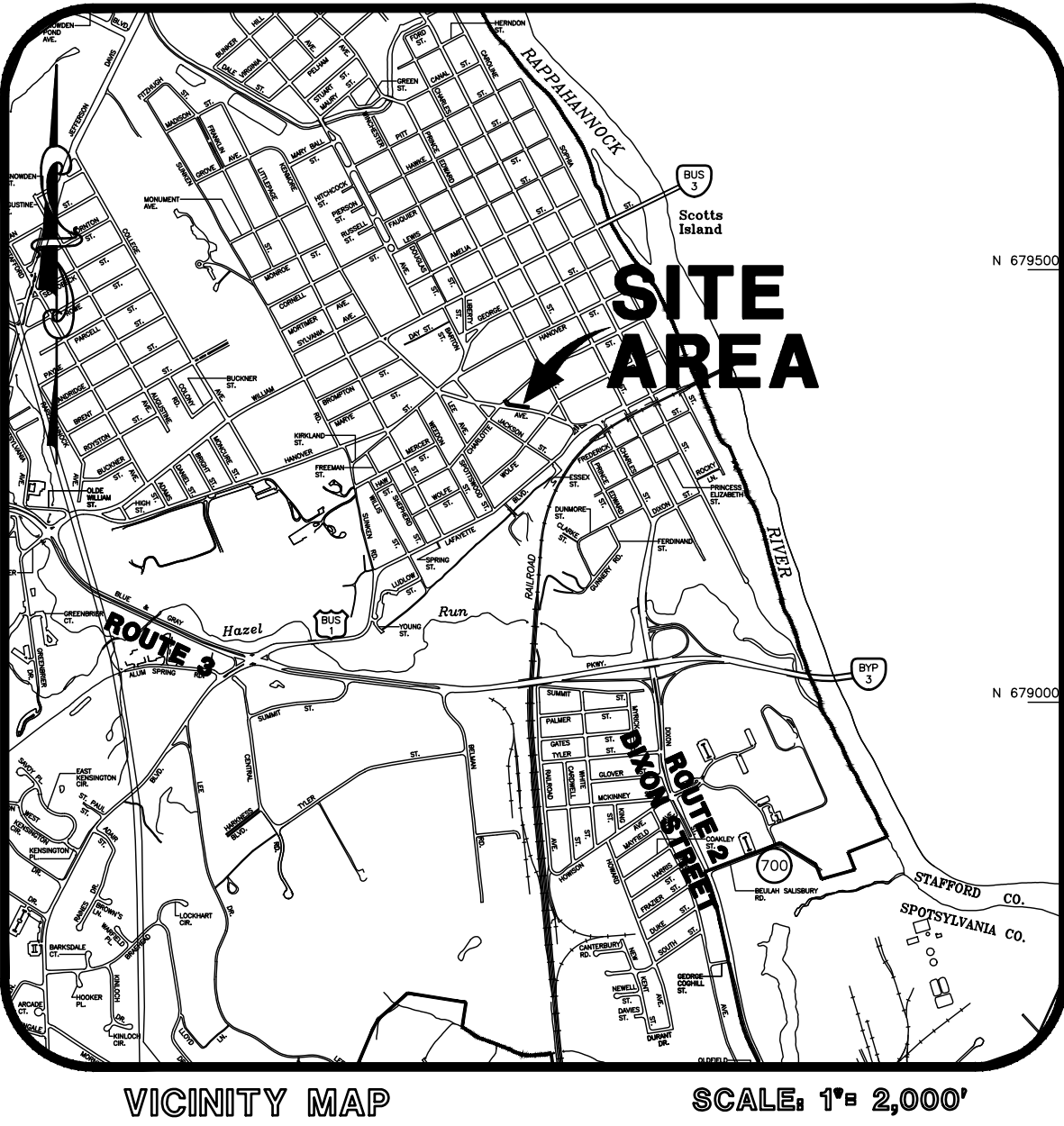


KENMORE AVENUE SEWER REHABILITATION

CHARLOTTE STREET TO WOLF STREET
CITY OF FREDERICKSBURG
VIRGINIA

ADDRESS: KENMORE STREET



INDEX TO DRAWINGS

- 1.) COVER SHEET
- 2.) STANDARD NOTES AND DETAILS
- 3.) EXISTING CONDITIONS
- 4.) DEMOLITION PLAN
- 5.) SANITARY SEWER PLAN AND PROFILE
- 6.) UTILITY DETAILS
- 7.) EROSION CONTROL NARRATIVE

OWNER:

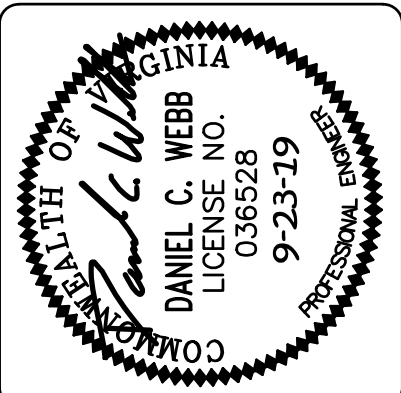
CITY OF FREDERICKSBURG
DEPARTMENT OF PUBLIC WORKS
ATTN: DAVE KING, DIRECTOR
715 PRINCESS ANNE STREET
PO BOX 7447
FREDERICKSBURG, VA 22404

PROJECT NARRATIVE:

THIS PROJECT INCLUDES THE INSTALLATION OF A 15 INCH
SANITARY SEWER MAIN ALONG KENMORE AVENUE FROM
CHARLOTTE STREET, INCLUDING THE DEMOLITION AND
REPLACEMENT OF ROADWAY, SIDEWALK AND CURB AND
GUTTER WITHIN THE LIMITS OF CONSTRUCTION AND THE
ABANDONEMENT AND/OR REMOVAL OF THE EXISTING WATER
AND SEWER MAINS WHICH ARE BEING REPLACED.

APPROVALS

REVISION		BLOCK
7-25-18	PER CITY COMMENTS	SLB
8-1-18	PER CITY COMMENTS	SLB
4-12-19	PER CITY COMMENTS	SLB
6-24-19	SEWER LATERAL LOCATION	MRE
9-23-19	PER CITY COMMENTS	SLB
DATE	DESCRIPTION	
BY		



W W WEBB
& ASSOCIATES, PLLC
ENGINEERING - SURVEYING - LAND PLANNING

11903 BOWMAN DRIVE, SUITE 106, FREDERICKSBURG, VA. 22408
OFFICE (540)371-1209 FAX (540)371-4650

COVER SHEET

KENMORE AVENUE
SEWER REHABILITATION
CITY OF FREDERICKSBURG
VIRGINIA

DATE:	JUNE 6, 2018
SCALE:	N/A
DESIGNED BY:	SLB
DRAWN BY:	MRE
CHECKED BY:	DCW

ACAD FILE:	<18D007ACP>
DRAWING NO:	18-D-007

SHEET NO.	1
OF 7 SHEETS	

SITE PLAN CERTIFICATE:

I HEREBY CERTIFY THAT TO THE BEST OF MY
KNOWLEDGE AND BELIEF THIS PLAN IS CORRECT AND
COMPLIES WITH THE REQUIREMENTS OF THE CITY OF
FREDERICKSBURG, VA, AND THAT I AM A QUALIFIED
PROFESSIONAL LICENSED IN VIRGINIA.

VA LICENSE #: 036528
SIGNATURE: *Daniel C. Webb* DATE: 9/23/19

RESPONSIBLE LAND DISTURBER CERTIFICATE:

RLD# 36528

Daniel C. Webb 540.371.1209
NAME TELEPHONE #
SIGNATURE: *Daniel C. Webb* DATE: 9/23/19

NOTE: THE R.L.D. MENTIONED ABOVE IS FOR THE
PURPOSES OF PLAN APPROVAL ONLY. PRIOR TO THE
START OF CONSTRUCTION, THE CONTRACTOR SHALL
DESIGNATE A PERSON CERTIFIED BY THE VIRGINIA DCR
AS THE R.L.D. FOR THIS PROJECT. THE CONTRACTOR
SHALL NOTIFY THE OWNER IN WRITING, WITH THE
ENGINEER COPIED, OF THE NAME AND R.L.D. NUMBER
OF THE DESIGNEE.

WEBB AND ASSOCIATES

A SURVEYING AND DESIGN COMPANY

11903 BOWMAN DRIVE, SUITE 106, FREDERICKSBURG, VA. 22408
[540]371-1209 [804]633-9907 FAX [540]371-4650

PROJECT NO. :

CONSTRUCTION NOTES

- ALL CONSTRUCTION TO CONFORM TO EXISTING STATE AND CITY BUILDING CODES.
- THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE RESIDENT ENGINEER PRIOR TO STARTING ANY CONSTRUCTION WITHIN ANY CITY RIGHT OF WAY.
- BEFORE DIGGING CALL MISS UTILITY OF CENTRAL VIRGINIA AT 1(800)257-7777.
- EXISTING UTILITIES SHOWN IN A GENERAL WAY ONLY. CONTRACTOR TO FIELD LOCATE EACH FOR EXACT LOCATION.
- CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT ALL EROSION AND SEDIMENT CONTROL STANDARDS ARE MET.
- CONTRACTOR TO SEED AND MULCH ALL DISTURBED AREAS.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD BEFORE STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCY.
- ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY THE CONTRACTOR OR HIS AGENT PRIOR TO THE BEGINNING OF CONSTRUCTION IN THE VICINITY OF THESE UTILITIES. THIS PLAN DOES NOT REPRESENT THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THOSE SHOWN ARE CORRECTLY LOCATED. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT EACH UTILITY COMPANY, CALL MISS UTILITY (1-800-257-7777), DIG TEST PITS, AND TAKE WHATEVER STEPS ARE NECESSARY TO ACCURATELY LOCATE AND PROTECT ALL EXISTING UTILITIES. NO CONSTRUCTION SHALL PROCEED UNTIL THE ACCURATE LOCATIONS OF UTILITIES HAVE BEEN MADE AND IT HAS BEEN DETERMINED BY THE CONTRACTOR THAT CONSTRUCTION CAN BE ACCOMPLISHED IN ACCORDANCE WITH THESE PLANS WITHOUT UTILITY CONFLICTS. IN THE EVENT THAT CONFLICTS EXISTS THE OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- EXISTING EDGE OF PAVEMENT IS TO BE SAWCUT AT CITY DIRECTION PRIOR TO EXCAVATION TAKING PLACE.
- THE CITY APPROVAL OF THESE PLANS WILL EXPIRE THREE (3) YEARS FROM DATE OF APPROVAL.
- ALL UTILITIES SHALL BE IN PLACE PRIOR TO PLACEMENT OF BASE MATERIAL.
- A COPY OF THE C.B.R. REPORT SHALL BE SUBMITTED PRIOR TO THE PLACEMENT OF THE BASE MATERIAL. IF THE C.B.R. VALUES ARE LESS THAN 10, THE DEVELOPER WILL BE REQUIRED TO SUBMIT HIS REVISED PAVEMENT DESIGN FOR CITY APPROVAL.
- BASE MUST BE APPROVED BY THE CITY FOR DEPTH, TEMPLATE, AND COMPACTION BEFORE SURFACE TREATMENT IS APPLIED.
- PRIME COAT MUST BE APPLIED TO ROAD BASE AGGREGATE PRIOR TO APPLICATION OF ASPHALT SURFACE (PRIME COAT RC-250, 0.3 GALLONS PER SQUARE YARD).
- CONTRACTOR SHALL DO SUCH OVERLOT GRADING AS NECESSARY TO PRECLUDE PONDING OF WATER ADJACENT TO ROADWAY.
- A TESTING FIRM WILL BE EMPLOYED BY THE DEVELOPER TO PROVIDE COMPACTION REPORTS IN ACCORDANCE WITH DIVISION III OF THE 1991 ROAD & BRIDGE SPECIFICATIONS.

CHESAPEAKE BAY NOTE

CHESAPEAKE BAY PRESERVATION ACT. THE PARCEL DESCRIBED WITHIN THIS PLAN DOES LIE WITHIN THE RESOURCE MANAGEMENT AREA (RMA) AND DOES NOT CONTAIN RESOURCE PROTECTION AREAS (RPA) WITHIN THE CHESAPEAKE BAY PRESERVATION OVERLAY DISTRICT.

PASS NOTE

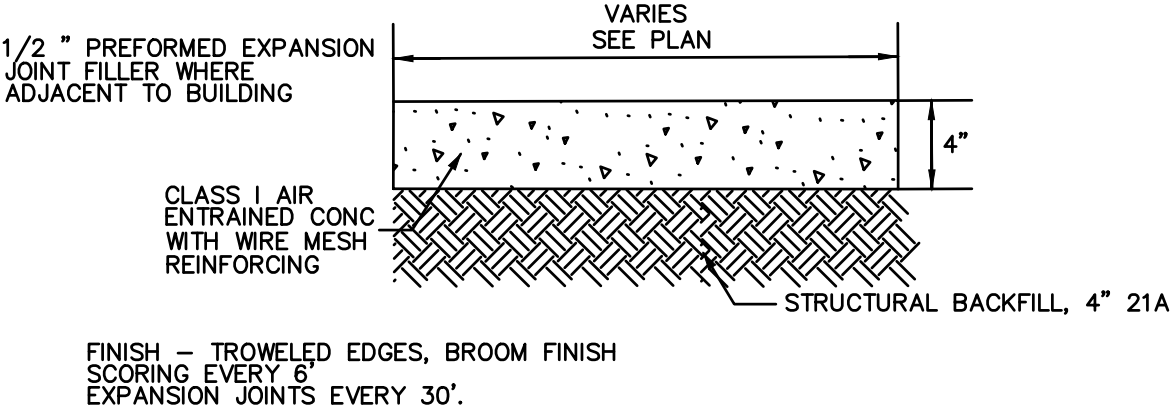
DUE TO RECENT FINDINGS OF POSSIBLE ACID SULPHATE SOILS (PASS) WITHIN THE PROXIMITY OF THE CITY OF FREDERICKSBURG, THE DEVELOPERS, BUILDER AND ENGINEER ACKNOWLEDGE THAT IF ACID SULPHATE SOILS OR OTHER SOILS THAT PRODUCE A pH OF <4 ARE PRESENT ON THE PROJECT SITE, EXTENSIVE TREATMENT TO BRING THE SOILS ACID/pH LEVEL TO AN ACCEPTABLE LEVEL TO SUSTAIN PLANT GROWTH MAY BE REQUIRED.

NOTE:
ALL FIRE HYDRANT BARRELS SHALL BE PAINTED ALUMINUM. THE STEAMER CAP SHALL BE PAINTED RED. THE TOPS SHALL BE PAINTED USING THE CRITERIA LISTED BELOW. ALL PAINT SHALL MEET THE CITY OF FREDERICKSBURG PUBLIC WORKS DEPT. STANDARDS. FLOW RATES SHALL BE BASED ON ACTUAL FIELD TEST RESULTS.
RED: <500 GPM
YELLOW: 500 – 100 GPM
GREEN: 1,000 – 1,500 GPM
BLUE: > 1,500 GPM

MISS UTILITY

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY THE CONTRACTOR OR HIS AGENT PRIOR TO THE BEGINNING OF CONSTRUCTION IN THE VICINITY OF THESE UTILITIES. THIS PLAN DOES NOT REPRESENT THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THOSE SHOWN ARE CORRECTLY LOCATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT EACH UTILITY COMPANY, CALL MISS UTILITY (1-800-552-7001), DIG TEST PITS, AND TAKE WHATEVER STEPS ARE NECESSARY TO ACCURATELY LOCATE AND PROTECT ALL EXISTING UTILITIES. NO CONSTRUCTION SHALL PROCEED UNTIL THE ACCURATE LOCATIONS OF UTILITIES HAVE BEEN MADE AND IT HAS BEEN DETERMINED BY THE CONTRACTOR THAT CONSTRUCTION CAN BE ACCOMPLISHED IN ACCORDANCE WITH THESE PLANS WITHOUT UTILITY CONFLICTS. IN THE EVENT THAT CONFLICTS EXIST, THE CITY AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL COORDINATE WITH CITY PUBLIC WORKS AND UTILITY COMPANIES DURING CONSTRUCTION.



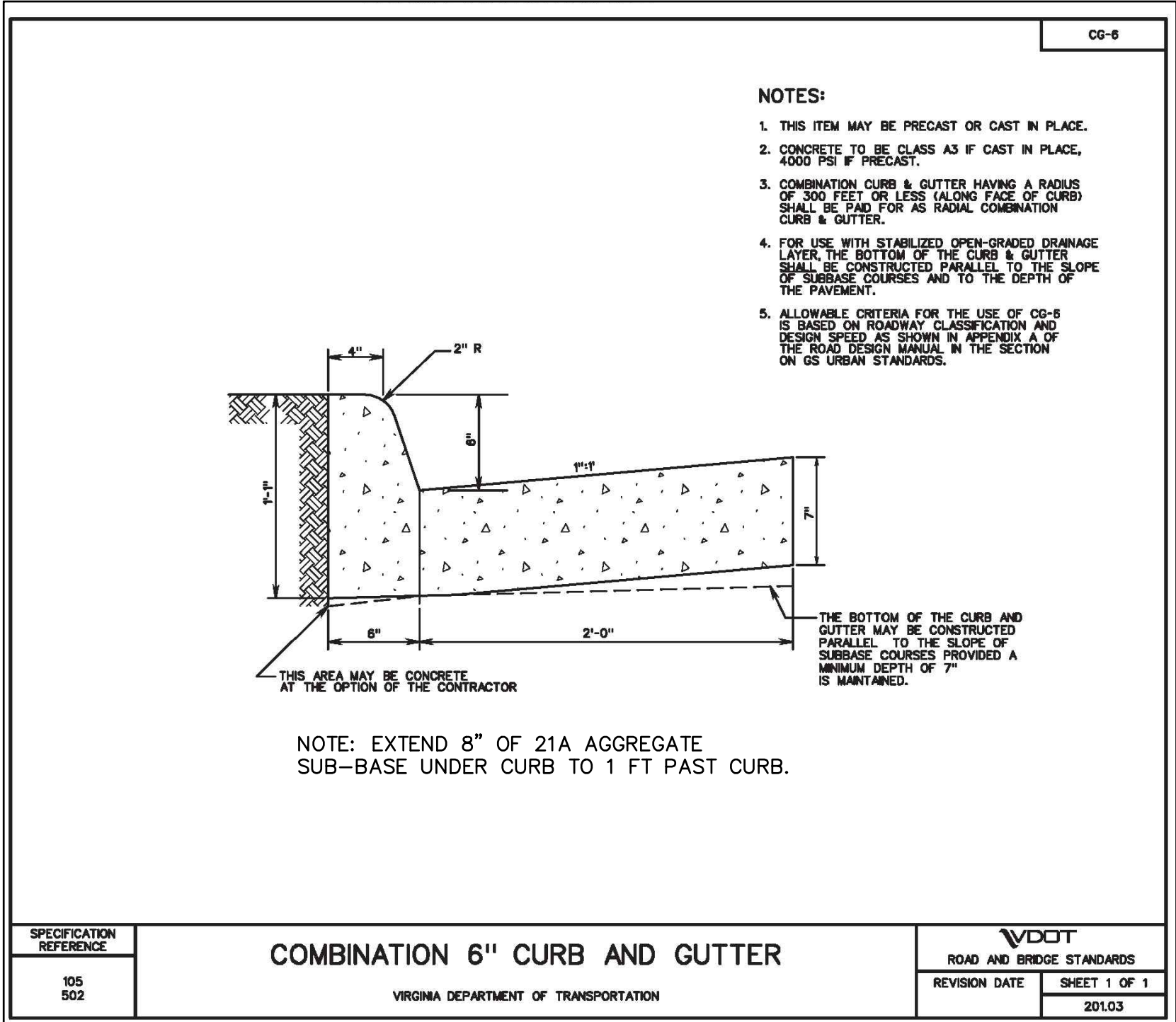
SIDEWALK DETAIL

N.T.S.

CITY CONSTRUCTION NOTES

- THESE REQUIREMENTS WERE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF CITY STREET ACCEPTANCE REQUIREMENTS.
- ALL WORK SHOWN HEREON SHALL BE IN STRICT ACCORDANCE WITH CITY ORDINANCES.
- IT IS THE INTENT OF THESE DRAWINGS TO SHOW ALL NECESSARY WORK. ANY ITEM OF WORK NOT SPECIFICALLY SHOWN, BUT NECESSARY TO ELIGIBILITY FOR ACCEPTANCE IS HEREBY IMPLIED.
- A CITY PERMIT MUST BE OBTAINED PRIOR TO STARTING CONSTRUCTION WITHIN ANY CITY HIGHWAY RIGHTS-OF-WAY.
- THE CONTRACTOR/OWNER SHALL PERFORM CBR TESTING ON THE SUBGRADE IN ACCORDANCE WITH CITY SPECIFICATIONS BY A CERTIFIED GEOTECHNICAL ENGINEER TO DETERMINE BASE AND PAVEMENT DESIGNS, AND THIS INFORMATION MUST BE FORWARDED TO THE CITY AND REVIEWED PRIOR TO PLACEMENT OF AGGREGATE BASE.
- THE CONTRACTOR/OWNER MUST SPECIFY IN WRITING TO THE CITY PRIOR TO CONSTRUCTION, THE TYPE OF SUBBASE, BASE AND SURFACE PAVEMENT TO BE UTILIZED ON EACH STREET FOR EACH TRAFFIC GROUP.
- THE CONTRACTOR SHALL NOTIFY THE CITY 72 HOURS PRIOR TO PLACEMENT OF BASE MATERIALS AND PRIOR TO THE PLACEMENT OF ASPHALT MATERIAL TO ENSURE THE CITY'S ABILITY TO PERFORM TESTING, SUCH AS PROOF-ROLLING, DEPTH CHECKS, COMPACTION, AND CONTAMINATION. OPTION: A CERTIFIED ANALYSIS FROM A PRIVATE ENGINEERING/TESTING FIRM MAY BE SUBMITTED WITHIN 7 WORKING DAYS OF THE REQUIRED TESTS. 72 HOURS NOTICE IS STILL REQUIRED PRIOR TO EACH ACTIVITY.
- ALL CULVERT PIPES SHALL BE OF A TYPE APPROVED BY THE CITY.
- ALL ENTRANCE PIPES FOR DRIVEWAYS SHALL BE A MINIMUM OF 12" IN DIAMETER, AND 30' IN LENGTH. (CONCRETE CULVERTS MAY BE 28" IN LENGTH), UNLESS OTHERWISE APPROVED BY THE CITY. DRIVEWAY CULVERTS IN CUL-DE-SACS SHALL BE CONCRETE. SEE APPROVED ROAD PLANS FOR THE PROPER CULVERT SIZES.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD BEFORE STARTING CONSTRUCTION AND NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL ERECT STREET SIGNS AND TRAFFIC CONTROL SIGNS AS INDICATED ON THE SUBDIVISION CONSTRUCTION PLANS. THE SIGNS SHALL CONFORM TO CITY SPECIFICATIONS. ALL PROPOSED SIGNS ARE TO BE INSTALLED PER STP-1 OF THE 2008 ROAD AND BRIDGE STANDARDS.
- A MINIMUM 35' PAVEMENT FILLET RADIUS IS RECOMMENDED.
- THE CONTRACTOR SHALL DO SUCH OVERLOT GRADING AS NECESSARY TO PRECLUDE THE PONDING OF WATER ADJACENT TO THE ROADWAY.
- SLOPE EASEMENTS WILL BE REQUIRED AT ALL LOCATIONS WHERE THE TOP OF THE CUT OR THE TOE OF THE FILL EXCEEDS THE PROPOSED DEDICATION OF RIGHT-OF-WAY. SEE PLAT FOR EXACT LOCATION.
- IF RUNNING WATER IS PRESENT IN ANY OUTLET CHANNEL DURING CONSTRUCTION WHERE DITCH PROTECTION IS REQUIRED, THE BOTTOM OF THE CHANNEL SHALL BE LINED WITH RIP-RAP STONE WITH EC-1 PLACEMENT. FURTHER, EC-2 OR EC-3 MUST HAVE A MINIMUM WIDTH OF 4' IN FILL SECTIONS, AND 5' IN CUT SECTIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT EROSION AND SEDIMENT CONTROL STANDARDS ARE MET, AND THE CONTRACTOR MUST SEED AND MULCH ALL DISTURBED AREAS ALONG WITH ALL GRADED AREAS WITHIN THE PROPOSED RIGHT-OF-WAY IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS.
- FINAL LOCATION OF MANHOLES, VALVES, FIRE HYDRANTS, AND OTHER APPURTENANCES SHALL NOT CONFLICT WITH OR CONSTRICT ROADWAY DRAINAGE. CONTRACTOR SHALL ADJUST MANHOLES AND/OR DITCH ALIGNMENT TO ENSURE PROPER ROADSIDE DRAINAGE, COMPATIBLE WITH EXISTING FIELD CONDITIONS.
- ALL WATER, SANITARY SEWER, AND STORM SEWER TRENCHES SHALL BE COMPACTED TO 95% DENSITY IN 6" LAYERS. COMPACTION TESTS MAY BE REQUIRED BY THE CITY.
- THE CITY WILL REQUIRE DENSITY TESTS FROM A CERTIFIED ENGINEERING FIRM FOR ALL CULVERT INSTALLATIONS WITH A DIAMETER OF 36" OR LARGER.
- VIDEO INSPECTION MAY BE REQUIRED ON ALL STORM SEWER SYSTEMS PRIOR TO FINAL CONSTRUCTION APPROVAL. A CITY INSPECTOR MUST BE ON-SITE DURING THE VIDEO INSPECTION PROCESS.
- THE CONTRACTOR MUST CONTACT THE FREDERICKSBURG DEPARTMENT OF PUBLIC WORKS/TRAFFIC OPERATIONS AT 540-372-1110 FOR A MARK OUT OF THE TRAFFIC SIGNAL EQUIPMENT A MINIMUM OF 72 HOURS PRIOR TO WORK BEGINNING WHEN WORKING WITHIN 1,000 FEET OF A TRAFFIC SIGNAL.
- THE FINAL FOOTAGE AND LOCATION FOR CITY STANDARD GUARDRAIL IS TO BE ESTABLISHED PRIOR TO THE COMPLETION OF FINE GRADING BY JOINT INSPECTION WITH THE CONTRACTOR, VDOT AND THE OWNER'S REPRESENTATIVE.
- WHENEVER TYING IN TO AN EXISTING ROAD, VDOT'S WP-2 STANDARD WILL APPLY, WHICH INCLUDES MILLING AND OVERLAY OF THE ADJACENT TRAVEL LANE.
- A PAVEMENT LEVELING COURSE MAY BE REQUIRED TO MEET THE INTENDED CROSS-SLOPE AND TYPICAL SECTION.
- ALL STORM STRUCTURES SHALL HAVE IS-1 INVERT SHAPING, AND SL-1'S (SAFETY LANDINGS) WILL BE REQUIRED IN ALL STRUCTURES WITH A DEPTH OVER 12'. ST-1'S (STEPS) ARE REQUIRED IN ANY STRUCTURE WITH A DEPTH OF 4' OR GREATER.

NOTE*
THE TYPICAL SECTIONS, BASE & PAVEMENT DESIGN ARE APPROVED BY THE ENGINEER AND THE CITY OF FREDERICKSBURG WITH THE CONTINGENCY THAT THE SUBGRADE HAS CBR OF 10 OR GREATER. NO SOIL REPORT BY OWNER



GENERAL NOTES

ALL CONSTRUCTION TO CONFORM TO EXISTING STATE AND COUNTY BUILDING CODE.

THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY PRIOR TO STARTING ANY CONSTRUCTION WITHIN ANY CITY RIGHT OF WAY.

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY THE CONTRACTOR OR HIS AGENT PRIOR TO THE BEGINNING OF CONSTRUCTION IN THE VICINITY OF THESE UTILITIES. THIS PLAN DOES NOT REPRESENT THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THOSE SHOWN ARE CORRECTLY LOCATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT EACH UTILITY COMPANY, CALL MISS UTILITY (1-800-552-7001), DIG TEST PITS, AND TAKE WHATEVER STEPS ARE NECESSARY TO ACCURATELY LOCATE AND PROTECT ALL EXISTING UTILITIES. NO CONSTRUCTION SHALL PROCEED UNTIL THE ACCURATE LOCATIONS OF UTILITIES HAVE BEEN MADE AND IT HAS BEEN DETERMINED BY THE CONTRACTOR THAT CONSTRUCTION CAN BE ACCOMPLISHED IN ACCORDANCE WITH THESE PLANS WITHOUT UTILITY CONFLICTS. IN THE EVENT THAT CONFLICTS EXIST, THA OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT ALL EROSION AND SEDIMENT CONTROL STANDARDS ARE MET.

CONTRACTOR TO SEED AND MULCH ALL DISTURBED AREAS.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD BEFORE STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DIFFERENCES.

NOTE:

THE CONTRACTOR SHALL NOTIFY THE CITY OF FREDERICKSBURG UTILITY DEPARTMENT 48 HOURS IN ADVANCE OF ANY WATER LINE FLUSHING. THE CONTRACTOR SHALL COORDINATE THE FLUSHING WITH THE CITY TO INSURE THAT THE EXISTING WATER SYSTEM PRESSURE AND SUPPLY IS NOT ADVERSELY AFFECTED.

WATER & SEWER

- ALL WATER LINES AND SEWER LINES AND CONSTRUCTION THEREOF SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF FREDERICKSBURG, VIRGINIA.
- INSPECTION AND APPROVAL OF ALL WORK AND MATERIALS PERTAINING TO WATER AND SEWER SHALL BE UNDER THE JURISDICTION OF THE CITY OF FREDERICKSBURG, VIRGINIA.
- THE CONTRACTOR MUST PROVIDE BOTH SANITARY AND WATER LATERALS TO EACH LOT. SEWER LATERALS SHALL BE 4" SDR-35. WATER SERVICE SHALL BE 5/8" X 3/4" METER SETS W/1" TYPE K COPPER.
- WATER PIPE SHALL BE CL 52 DUCTILE IRON MEETING ANS/AWWA C104/A21.51. RESTRAINED MECHANICAL JOINT PIPE, WITH MEGALUG RETAINING GLANDS. ALL DUCTILE IRON PIPE TO BE POLYWRAPPED IN THE PRESENCE OF ACID SOILS.
- ALL GRAVITY SANITARY SEWER MAINS SHALL BE PVC SEWER PIPE TYPE PSM POLY VINYL CHLORIDE. PIPE AND FITTINGS SHALL MEET ASTM DESIGNATION D-3034-73 MIN. DESIGNATION USED SHALL BE SDR-35 UNLESS OTHERWISE NOTED. CLASS A BEDDING SHALL BE USED ON DEPTHS EXCEEDING 24 FEET.
- THERE SHALL BE A 10' HORIZONTAL SEPARATION BETWEEN WATER LINES AND SEWER LINES AND A VERTICAL SEPARATION OF 18" BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. THIS APPLIES TO HOUSE SEWER LATERALS ALSO.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY AS-BUILT INFORMATION ON ALL CONSTRUCTION. ALL LATERAL AND APPURTENANCES WILL BE REFERENCED FROM THE CLOSEST MANHOLE.
- ALL WATER LINES AND SEWER LINE TRENCHES TO BE COMPACTED TO 95% DENSITY.
- ALL WATER METERS AND SEWER LATERALS SHALL BE SET A MIN. OF 3' BEHIND TOP OF TOE OF ROAD SLOPE WHEN CUTS AND FILLS EXCEED RIGHT-OF-WAY. WHERE CUTS AND FILLS DO NOT EXCEED RIGHT-OF-WAY, PLACE WATER METERS AND SEWER LATERALS 5' BEHIND RIGHT-OF-WAY.
- AIR TEST REQUIRED ON SEWER LINES IF GROUND WATER NOT ADEQUATE TO RUN INFILTRATION TEST.
- SEWER CONNECTION TO EXISTING SANITARY MANHOLES SHALL BE MADE BY CORE DRILLING MANHOLE AND INSTALLING RUBBER BOOT CREATING A WATER-TIGHT CONNECTION.
- ALL SEWER PIPE SHALL BE BEDDED WITH A MINIMUM OF 4" STONE UNDER PIPE AND BEDDED TO THE SPRING LINE OF PIPE USING A STONE MEETING GRADUATION SIZE FROM #6 STONE TO #57 STONE.
- NO EXISTING WATER MAIN TO BE TAMPERED WITH BY TAPPING, OPENING, OR CLOSING VALVES WITHOUT UTILITY CONSTRUCTION INSPECTOR PRESENT ON THE JOB SITE.
- NO NEW WATER LINES TO BE FILLED OR FLUSHED WITHOUT UTILITY INSPECTOR PRESENT.
- NO OCCUPANCY PERMIT SHALL BE ISSUED FOR DWELLING WITHIN THIS SECTION UNTIL THE FOLLOWING WORK IS COMPLETED. WATER AND SEWER SYSTEM, ALL DRAINAGE SYSTEMS INSTALLED AND COMPLETED IN ACCORDANCE WITH THE ENGINEER'S PLANS. ALL STREETS COMPLETED TO THE POINT THAT ALL ROADWAY DITCHES, SHOULDERS AND BASE MATERIAL IN PLACE. ALL STREET RIGHT-OF-WAY AND ALL AREAS DISTURBED DURING CONSTRUCTION AND DEVELOPMENT SHALL BE SEEDDED AND STABILIZED.
- MINIMUM COVER FOR WATER LINES SHALL BE 36" FROM TOP OF PIPE TO FINISHED GRADE.
- ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT MINIMUM GRADE OF 2% UNLESS APPROVED BY THE ENGINEER AND/OR OWNER.
- A COMPLETE SET OF AS-BUILT PLANS SHALL BE SUBMITTED TO THE DEPT. OF PUBLIC WORKS UPON COMPLETION OF THE WATER AND SEWER SYSTEM, AND PRIOR TO FINAL ACCEPTANCE. A COMPLETE SET OF MYLAR PRINTS WITH AS-BUILT INFORMATION MUST BE SUBMITTED. AS-BUILT PLANS MUST BE DETERMINED BY ACTUAL FIELD SURVEY.

NOTE: 15" SANITARY SEWER PIPE SHALL BE PVC SDR 26.

TRAFFIC MAINTENANCE

- CONTRACTOR SHALL COORDINATE TRAFFIC MAINTENANCE PLAN WITH CITY PUBLIC WORKS AND ANY OTHER AGENCIES THE CITY MAY DEEM NECESSARY.
- CONTRACTOR SHALL PROVIDE A TRAFFIC MAINTENANCE PLAN FOR THE CITY'S REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- ACCESS MUST BE PROVIDED TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
- PEDESTRIAN TRAFFIC MUST BE PROVIDED TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
- CITY APPROVED SAFETY BARRIERS MUST BE PROVIDED AROUND ALL EXCAVATIONS AT ALL TIMES.

WATER SEWER CONST. NOTES

- CONTRACTOR SHALL INSURE AND MAKE PROVISIONS SO THAT WATER AND SEWER SERVICE IS MAINTAINED TO ALL EXISTING SERVICES AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL CUT AND CAP EXISTING WATER MAINS TO BE ABANDONED IN PLACE.
- CONTRACTOR SHALL CUT AND CAP EXISTING SEWER MAINS TO BE ABANDONED IN PLACE AND FILL WITH FLOWABLE FILL PER CITY STANDARDS.
- CONTRACTOR SHALL LOCATE AND TIE OVER ALL EXISTING WATER AND SEWER SERVICES AFFECTED BY THE CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CITY OF FREDERICKSBURG PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEMOLISHED PIPE, FITTINGS, CONCRETE AND ASSOCIATED MATERIALS.
- CONTRACTOR SHALL PROVIDE ADEQUATE PIPE RESTRAINTS FOR ALL FITTINGS AND VALVES. RESTRAINTS SHALL INCLUDE MEGA LUG TYPE RESTRAINTS. CONTRACTOR TO VERIFY REQUIRED RESTRAINED LENGTHS IN ACCORDANCE WITH CITY STANDARDS FOR ALL FITTINGS AND VALVES BASED ON TEST PRESSURE OR OPERATING PRESSURES.
- CONTRACTOR SHALL UNCOVER AND VERIFY AND/OR RESTRAIN EXISTING PIPE JOINTS WHEN NECESSARY TO PROVIDE THE NECESSARY RESTRAINED PIPE LENGTH.
- CONTRACTOR SHALL PROVIDE CONCRETE THRUST BLOCKS WHEN NECESSARY, AS APPROVED BY CITY PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL RESTORE ALL PAVEMENT, PAVEMENT MARKINGS, CURB AND GUTTER, SIDEWALK, DRIVEWAYS, LANDSCAPE AREAS AND YARDS IN ACCORDANCE WITH CITY OF FREDERICKSBURG STANDARDS.
- CONTRACTOR SHALL PROVIDE A PUMP AROUND AS NECESSARY TO MAINTAIN SANITARY SEWER SERVICE DURING THE INSTALLATION OF THE PROPOSED SANITARY SEWER. PUMP AROUND PLAN AND OPERATION MUST BE APPROVED BY THE CITY PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION.

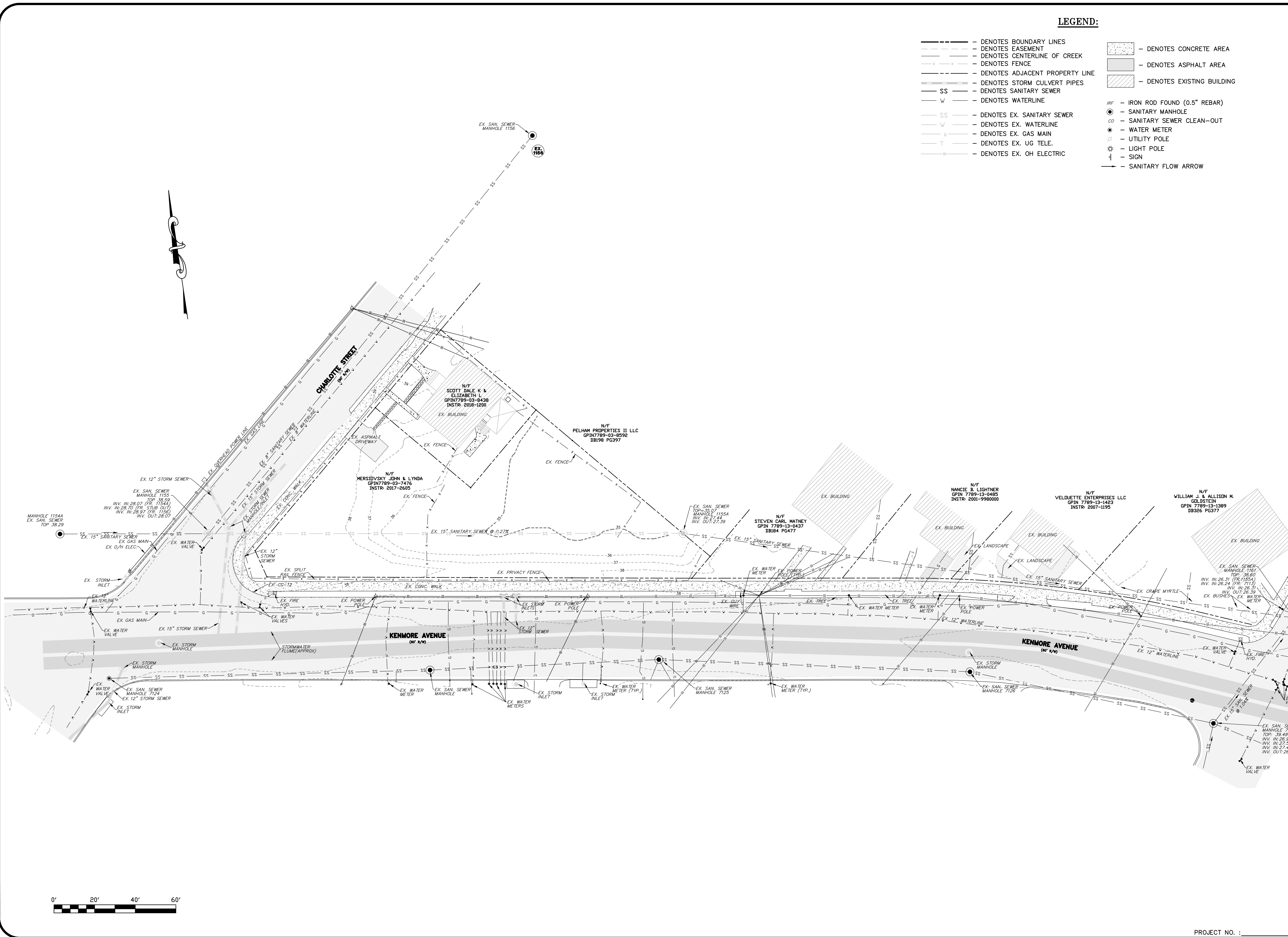
STANDARD NOTES & DETAILS

KENMORE AVENUE
SEWER REHABILITATION
CITY OF FREDERICKSBURG
VIRGINIA

DATE: JUNE 6, 2018
SCALE: N/A
DESIGNED BY: SLB
DRAWN BY: MRE
CHECKED BY: DCW

ACAD FILE: <18D007BSP>
DRAWING NO: 18-D-007

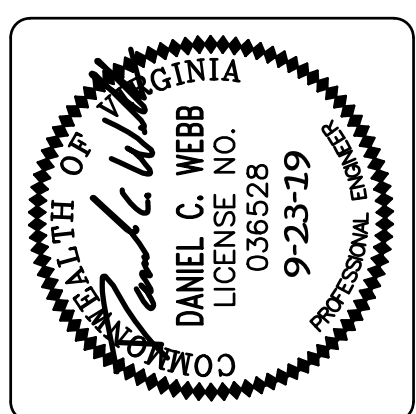
SHEET NO. 2
OF 7 SHEETS



LEGEND:

- DENOTES BOUNDARY LINES
- - - DENOTES EASEMENT
- - - DENOTES CENTERLINE OF CREEK
- x - x - DENOTES FENCE
- - - DENOTES ADJACENT PROPERTY LINE
- SS --- DENOTES STORM CULVERT PIPES
- SS --- DENOTES SANITARY SEWER
- W --- DENOTES WATERLINE
- SS --- DENOTES EX. SANITARY SEWER
- W --- DENOTES EX. WATERLINE
- G --- DENOTES EX. GAS MAIN
- T --- DENOTES EX. UG TELE.
- III --- DENOTES EX. OH ELECTRIC
- [Pattern] DENOTES CONCRETE AREA
- [Pattern] DENOTES ASPHALT AREA
- [Pattern] DENOTES EXISTING BUILDING
- IRF - IRON ROD FOUND (0.5" REBAR)
- - SANITARY MANHOLE
- CO - SANITARY SEWER CLEAN-OUT
- - WATER METER
- - UTILITY POLE
- - LIGHT POLE
- - - SIGN
- - SANITARY FLOW ARROW

REVISION		BLOCK	
PER CITY COMMENTS	SLB	PER CITY COMMENTS	SLB
7-25-18	8-1-18	PER CITY COMMENTS	SLB
8-1-18	4-1-19	SEWER LATERAL LOCATION	MRE
4-1-19	6-24-19	PER CITY COMMENTS	SLB
6-24-19	9-23-19	DATE	DESCRIPTION
9-23-19			



W W WEBB & ASSOCIATES, PLLC
ENGINEERING - SURVEYING - LAND PLANNING

W

11903 BOWMAN DRIVE, SUITE 106, FREDERICKSBURG, VA. 22408
OFFICE (540)371-1209 FAX (540)371-4650

EXISTING CONDITIONS

KENMORE AVENUE
SEWER REHABILITATION
CITY OF FREDERICKSBURG
VIRGINIA

DATE:	JUNE 6, 2018
SCALE:	1"=20'
DESIGNED BY:	SLB
DRAWN BY:	MRE
CHECKED BY:	DCW

ACAD FILE:	<18D007CCP>
DRAWING NO:	18-D-007

SHEET NO.	3
OF 7 SHEETS	

PROJECT NO. :

1. SEWER MAIN SHALL BE ABANDONED AND/OR REMOVED WITHIN THE AREAS INDICATED.
2. MAINS TO ABANDONED IN PLACE SHALL BE CAPPED AND FILLED IN ACCORDANCE WITH CITY OF FREDERICKSBURG STANDARDS AND SPECIFICATIONS.
3. ROADWAY SHALL BE CUT AND PATCHED IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. PAVEMENT SECTION MUST MATCH EXISTING PAVEMENT SECTIONS IF IT EXCEEDS THE CITY STANDARD. CITY WILL DETERMINE LIMITS OF FINAL ROAD RESTORATION FOLLOWING SUBSTANTIAL COMPLETION OF THE WATER AND SEWER MAINS.
4. CURB AND GUTTER SHALL BE DEMOLISHED AND REPLACED IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS, AS NECESSARY TO INSTALL THE WATER AND SEWER.
5. CONCRETE SIDEWALK SHALL BE DEMOLISHED AND REPLACED IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS, AS NECESSARY TO INSTALL THE WATER AND SEWER.
6. CONTRACTOR SHALL REMOVE AND RESTORE, OR REPLACE ANY ITEMS SUCH AS SIGNS, MAILBOXES OR LANDSCAPE MATERIALS WHICH HAVE TO BE REMOVED OR WHICH MAY BE DAMAGED DURING CONSTRUCTION.
7. EXISTING GRASSED LAWNS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. THE CITY SHALL DETERMINE WHICH AREAS MAY NEED TO BE SODDED OR SEEDED.
8. EXISTING DRIVEWAYS SHALL BE RESTORED TO THE ORIGINAL CONDITION.

	- DENOTES BOUNDARY LINES		- DENOTES CONCRETE AREA
	- DENOTES EASEMENT		- DENOTES ASPHALT AREA
	- DENOTES CENTERLINE OF CREEK		- DENOTES EXISTING BUILDING
	- DENOTES FENCE		
	- DENOTES ADJACENT PROPERTY LINE		
	- DENOTES STORM CULVERT PIPES		
	- DENOTES SANITARY SEWER		
	- DENOTES WATERLINE		
	- DENOTES EX. SANITARY SEWER		IRF - IRON ROD FOUND (0.5" REBAR)
	- DENOTES EX. WATERLINE		CO - SANITARY SEWER CLEAN-OUT
	- DENOTES SANITARY SEWER		WM - WATER METER
	TO BE ABANDONED AND/OR REMOVED		UT - UTILITY POLE
	- DENOTES WATERLINE		LP - LIGHT POLE
	TO BE ABANDONED AND/OR REMOVED		S - SIGN
	- DENOTES EX. GAS MAIN		- INDICATES LIMITS OF DEMOLITION
	- DENOTES EX. UG TELE.		- SANITARY FLOW ARROW
	- DENOTES EX. OH ELECTRIC		



REVISION BLOCK		DATE	DESCRIPTION	BY
7-25-18	PER CITY COMMENTS			SLB
8-1-18	PER CITY COMMENTS			SLB
4-12-19	PER CITY COMMENTS			SLB
6-24-19	SEWER LATERAL LOCATION			MRE
9-23-19	PER CITY COMMENTS			SLB



111903 BOWMAN DRIVE, SUITE 106, FREDERICKSBURG, VA. 22408
OFFICE (540)371-1209 FAX (540)371-4650

DEMOLITION PLAN

KENMORE AVENUE
SEWER REHABILITATION
CITY OF FREDERICKSBURG
VIRGINIA

DATE: JUNE 6, 2018

SCALE: 1"=20'

DESIGNED BY: SLB

DRAWN BY: MRE

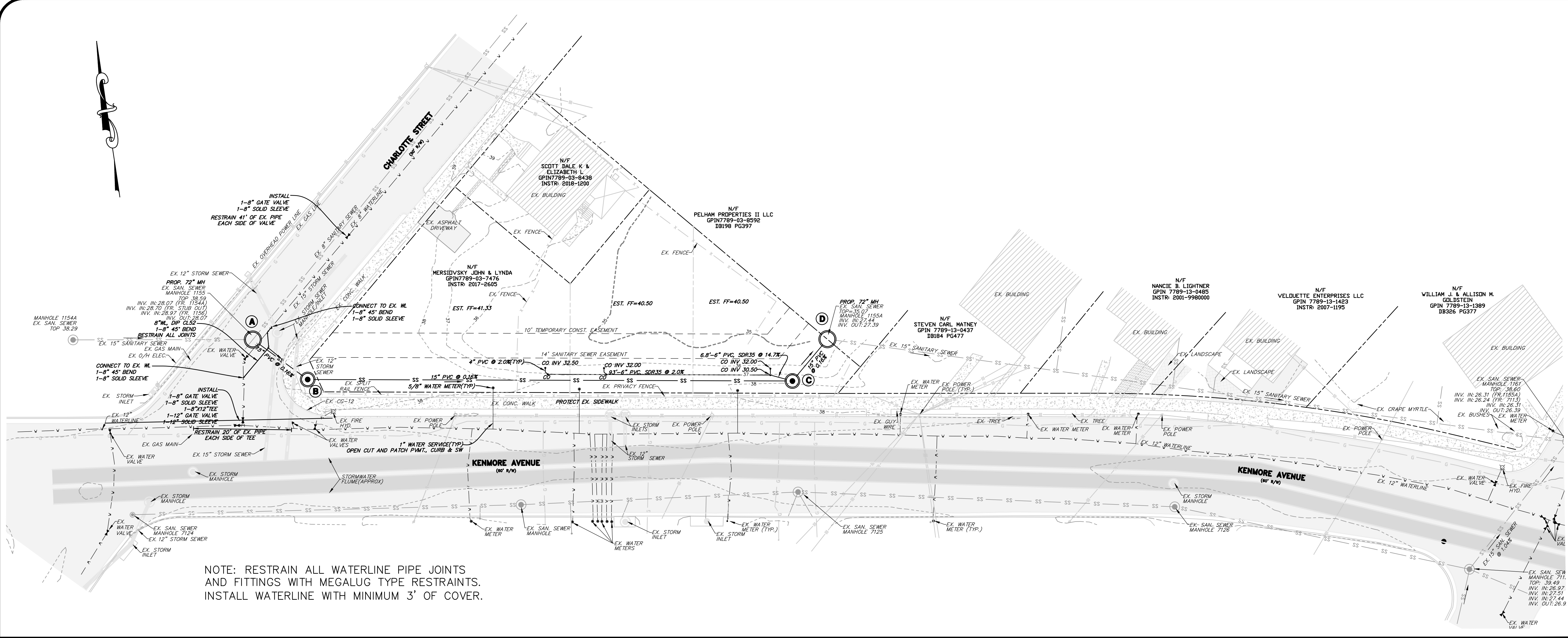
CHECKED BY: DCW

ACAD FILE: <18D007DCP>

DRAWING NO: 18-D-007

SHEET NO. 4
OF 7 SHEETS

PROJECT NO. : _____



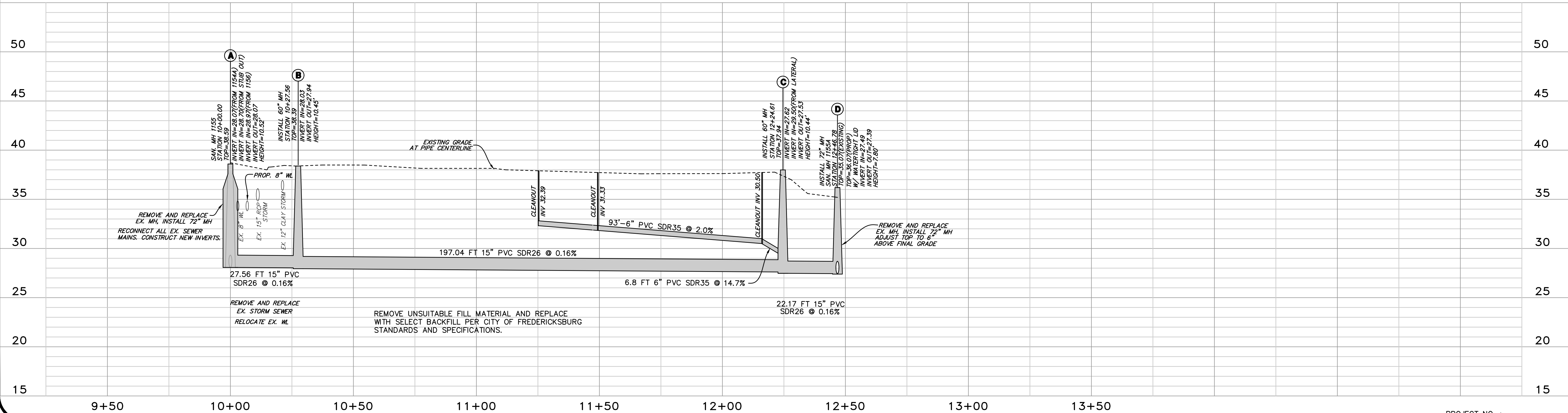
NOTE: RESTRAIN ALL WATERLINE PIPE JOINTS AND FITTINGS WITH MEGALUG TYPE RESTRAINTS. INSTALL WATERLINE WITH MINIMUM 3' OF COVER.



NOTE: SEE SHEET 2 FOR NOTES AND DETAILS AND SHEET 6 FOR DETAILS.

KENMORE AVENUE
SCALE: 1"= 20' (HORIZONTAL)
1"= 5' (VERTICAL)

NOTE: REMOVE UNSUITABLE FILL MATERIAL AND REPLACE WITH SELECT BACKFILL PER CITY OF FREDERICKSBURG STANDARDS AND SPECIFICATIONS.



REVISION

NO.	DATE	DESCRIPTION
1	7-25-18	PER CITY COMMENTS
2	8-1-18	PER CITY COMMENTS
3	4-12-19	PER CITY COMMENTS
4	6-24-19	SEWER LATERAL LOCATION
5	9-23-19	PER CITY COMMENTS

W W WEBB & ASSOCIATES, PLLC

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OFFICE (540)371-1209 FAX (540)371-4650

SANITARY SEWER PLAN AND PROFILE

KENMORE AVENUE
SEWER REHABILITATION
CITY OF FREDERICKSBURG
VIRGINIA

DATE: JUNE 6, 2018

SCALE: 1"=20'H 1"=5'V

DESIGNED BY: SLB

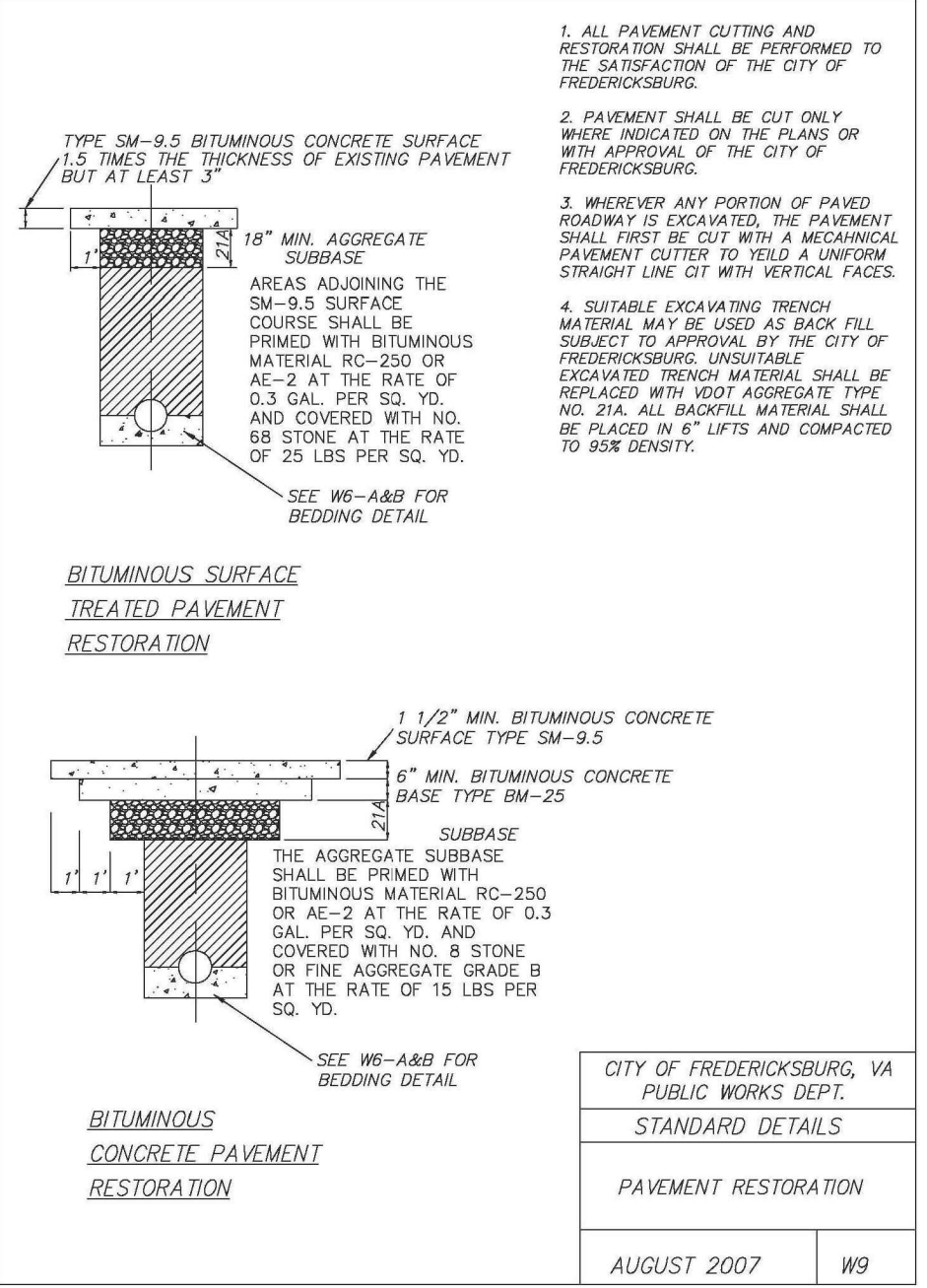
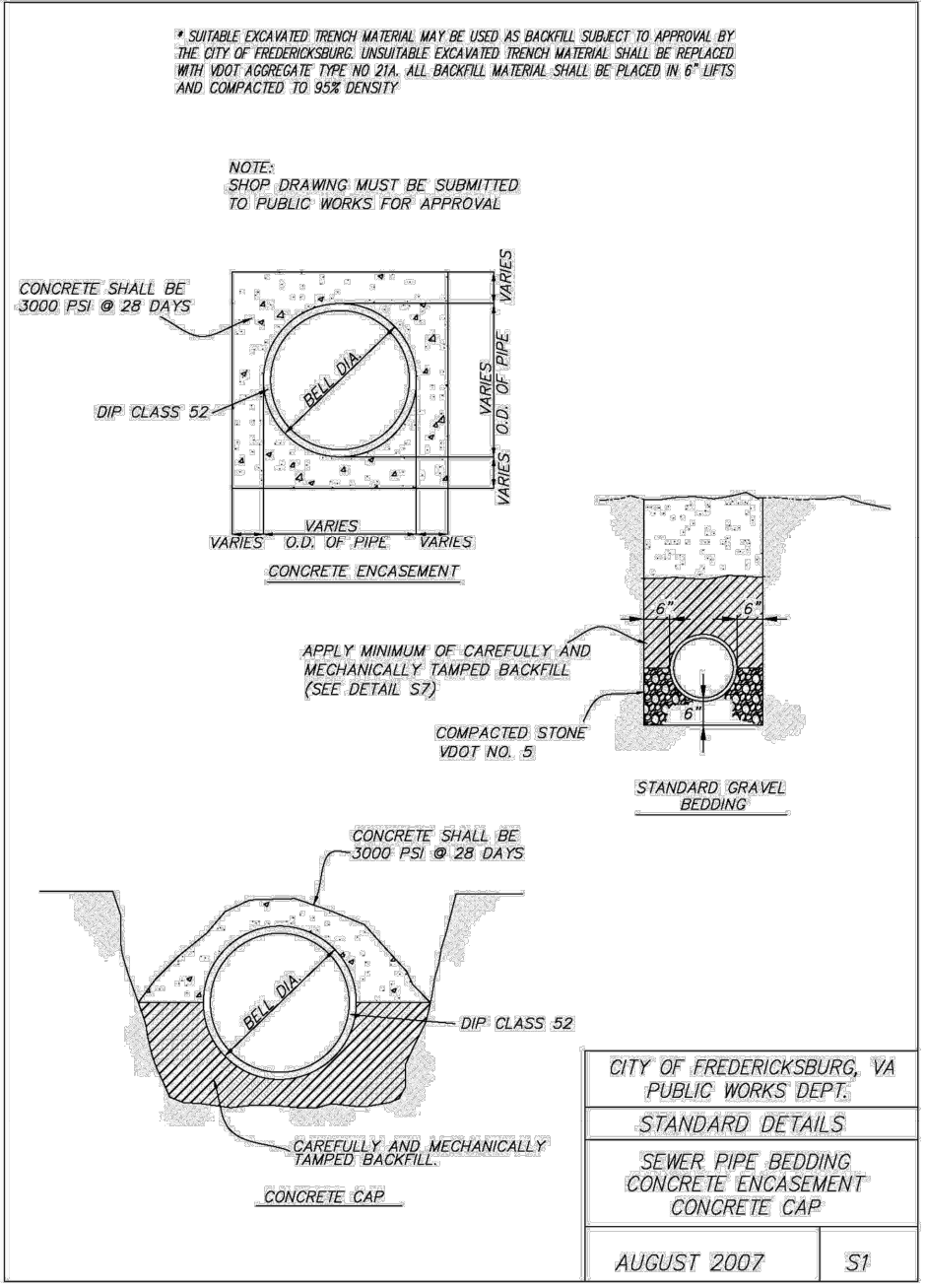
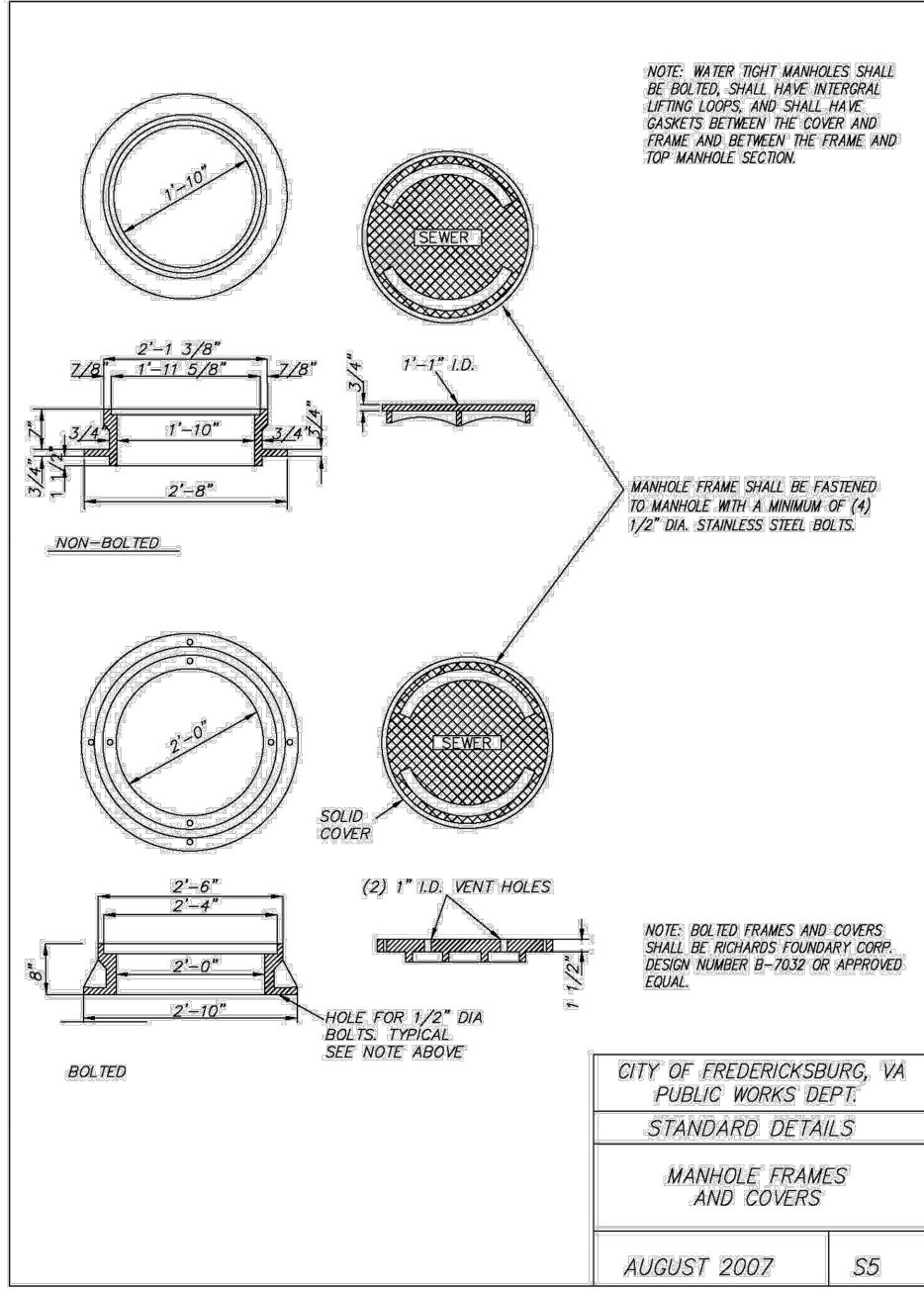
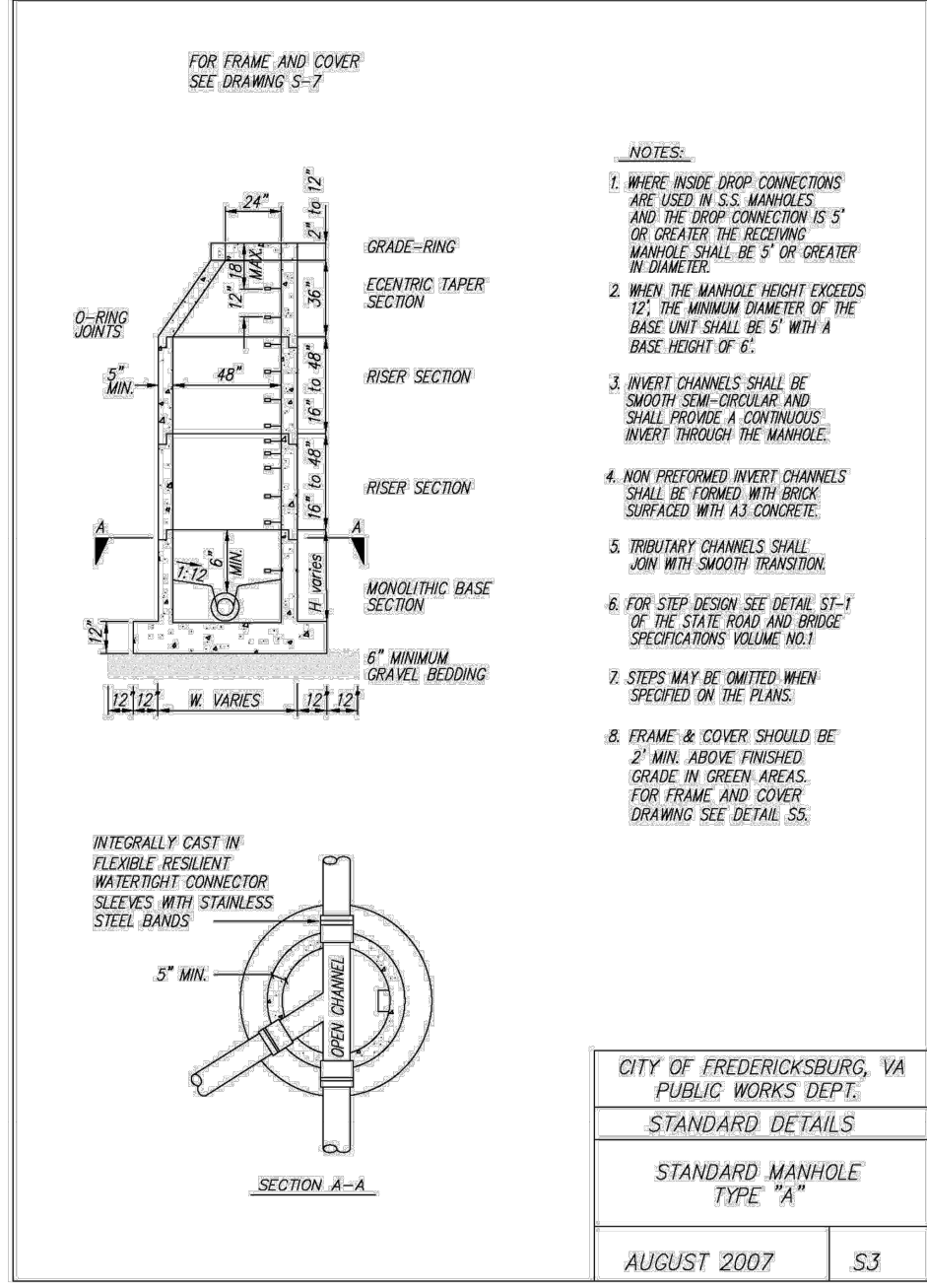
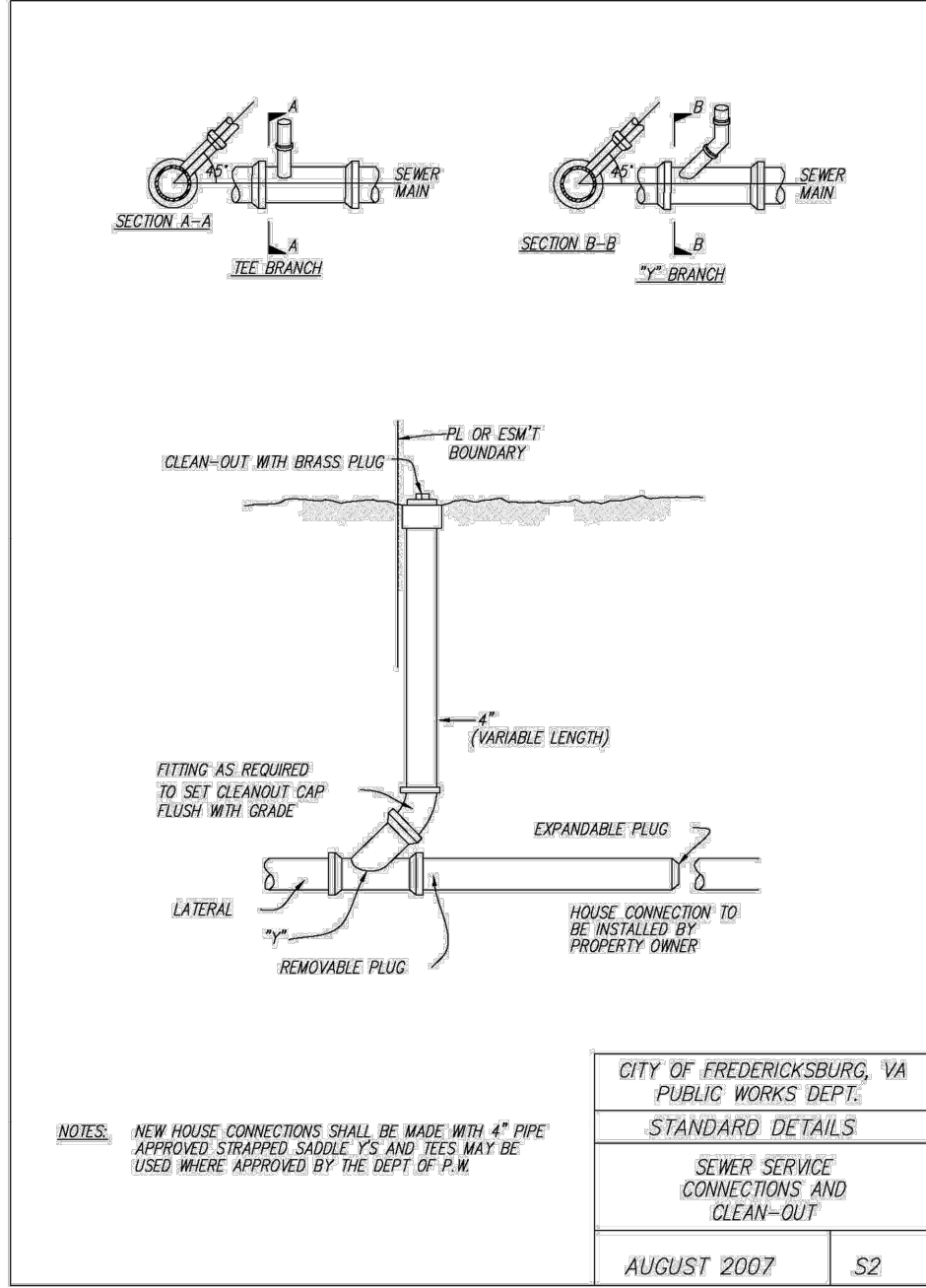
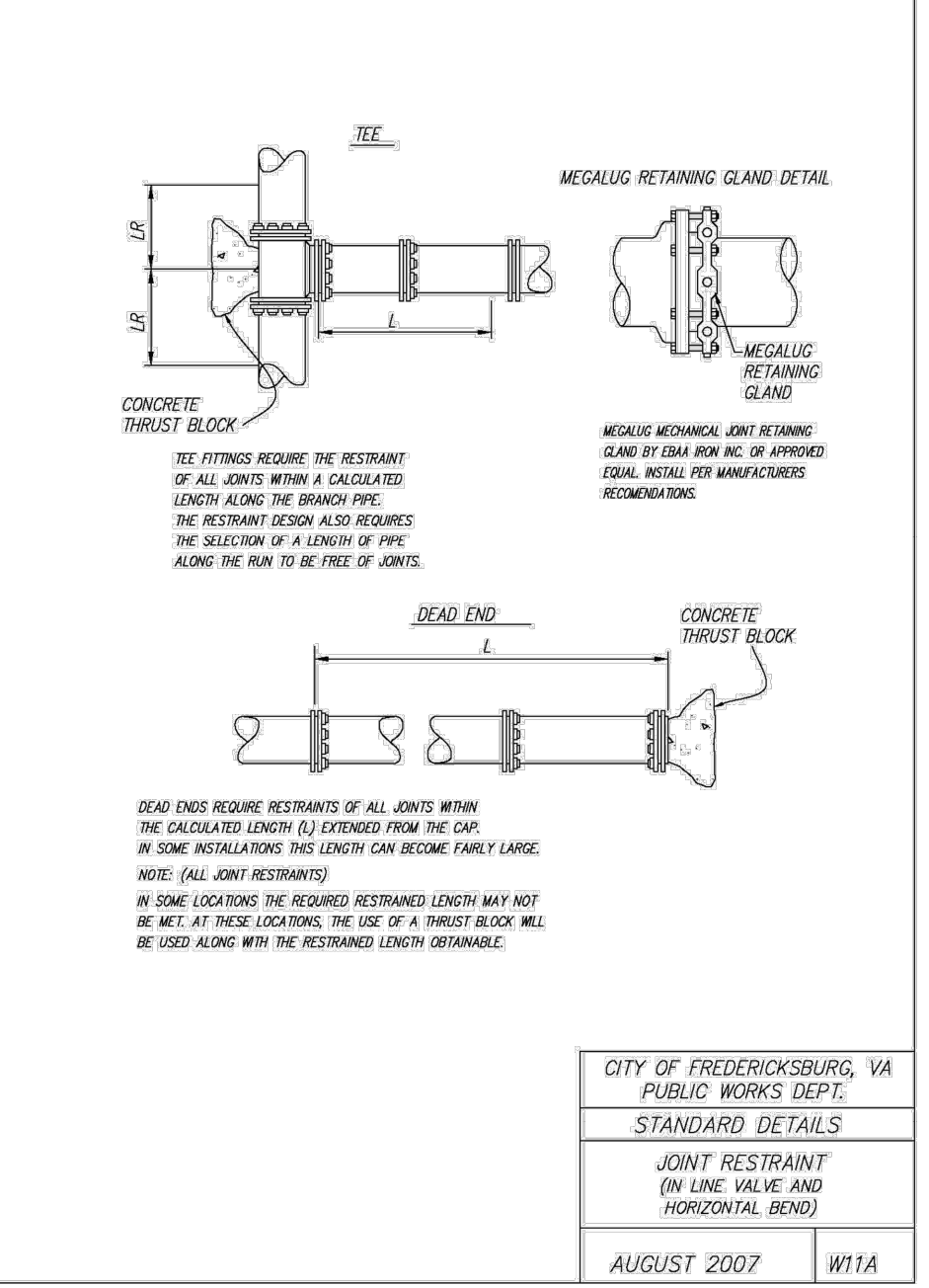
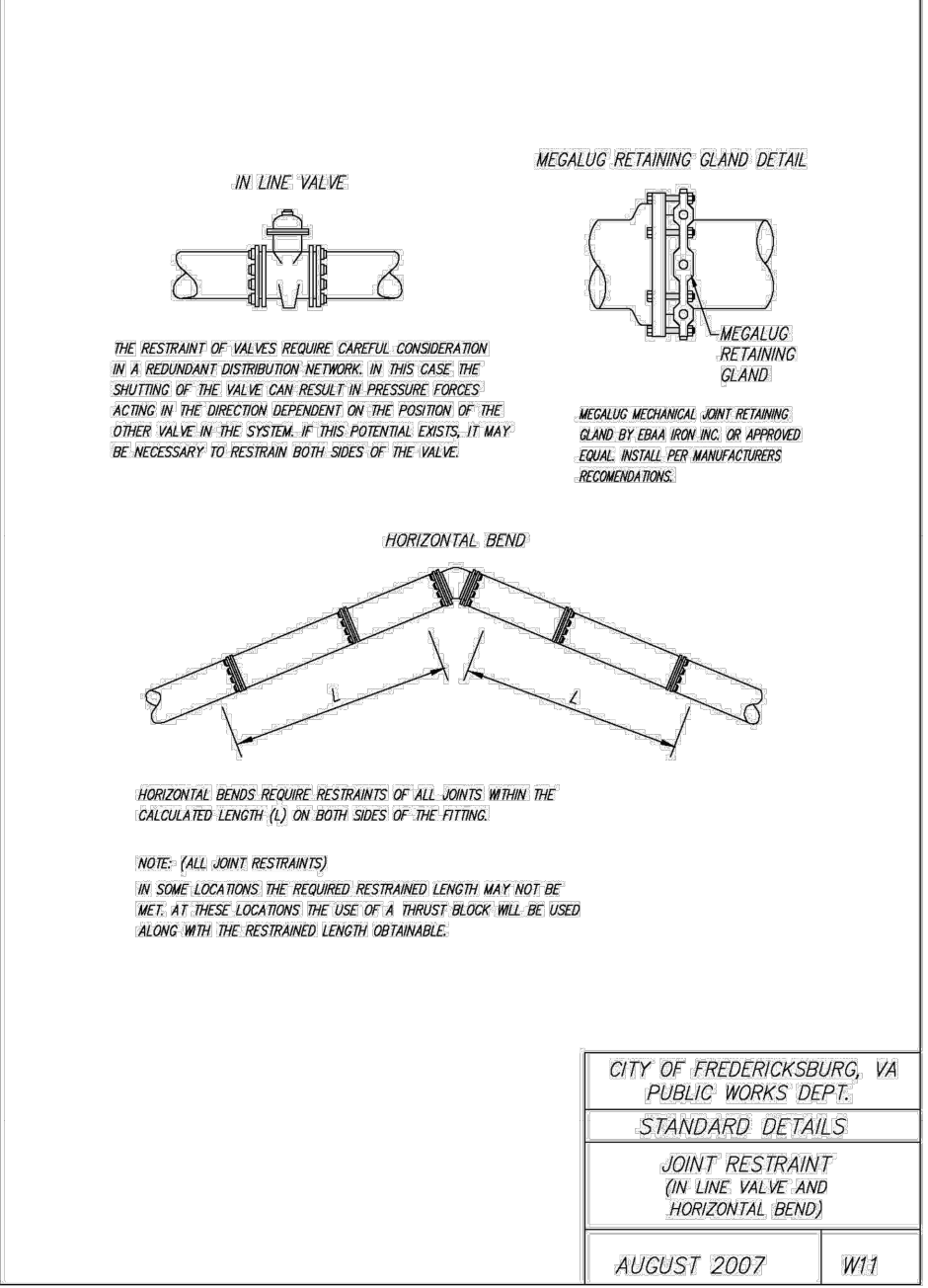
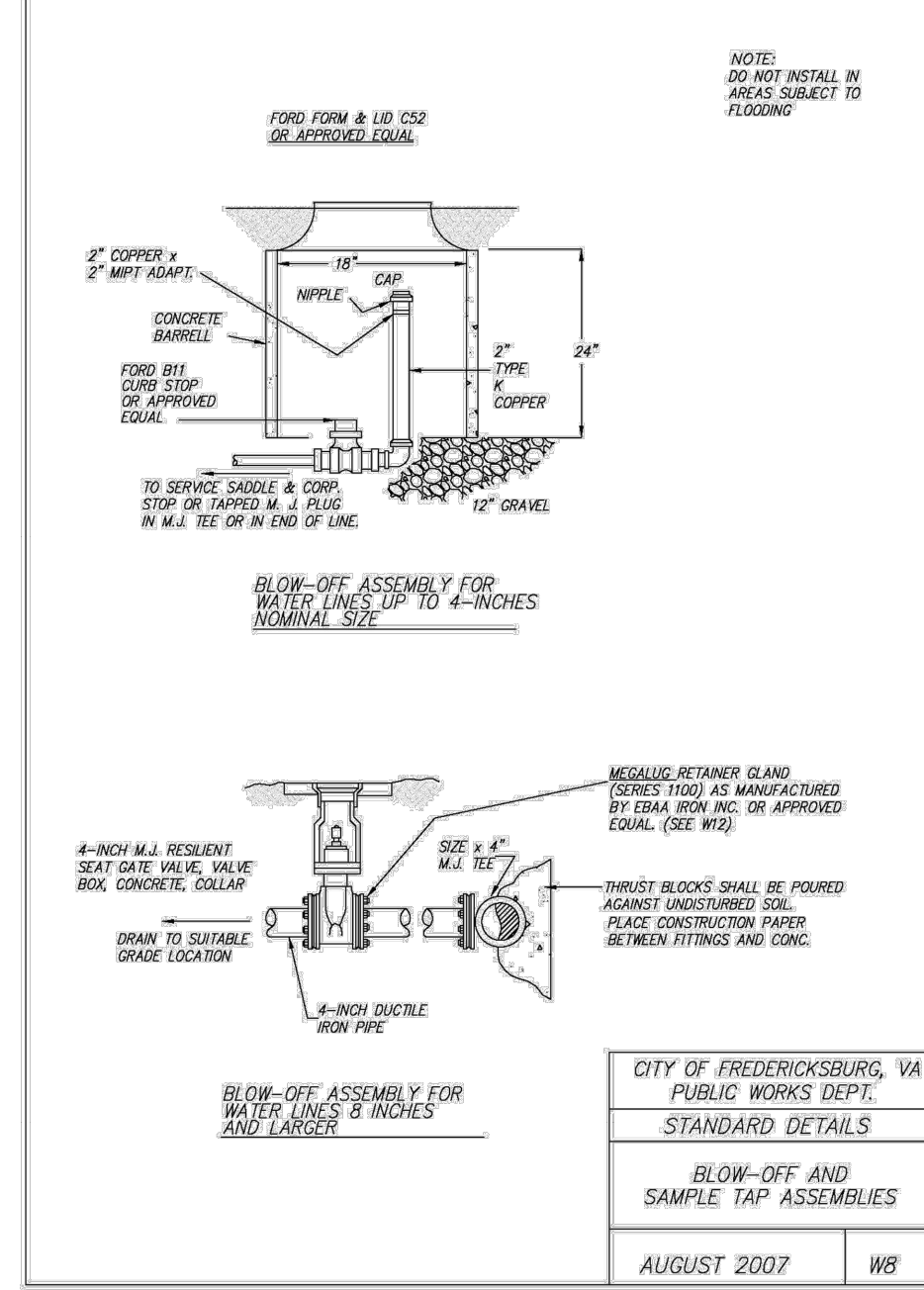
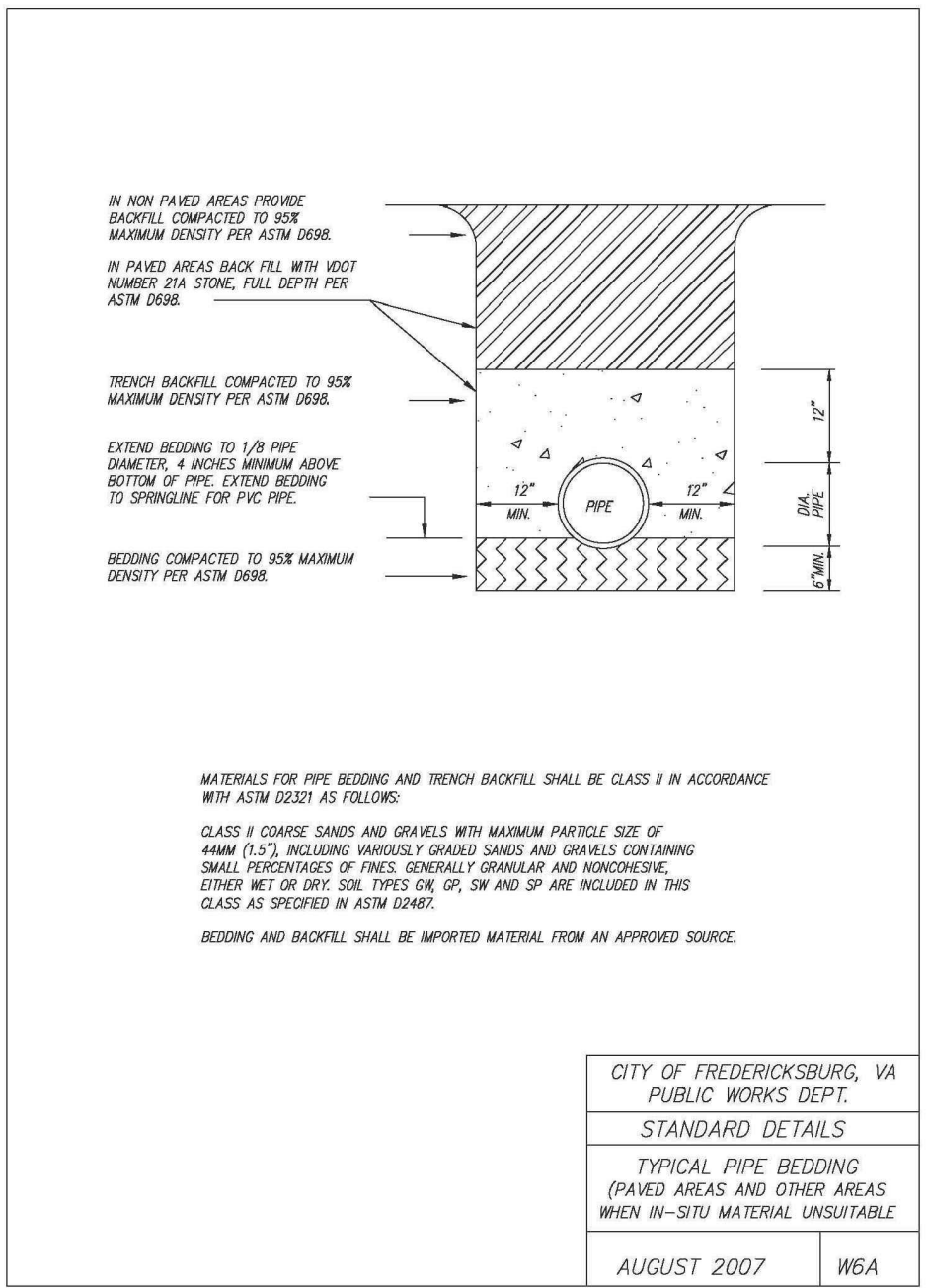
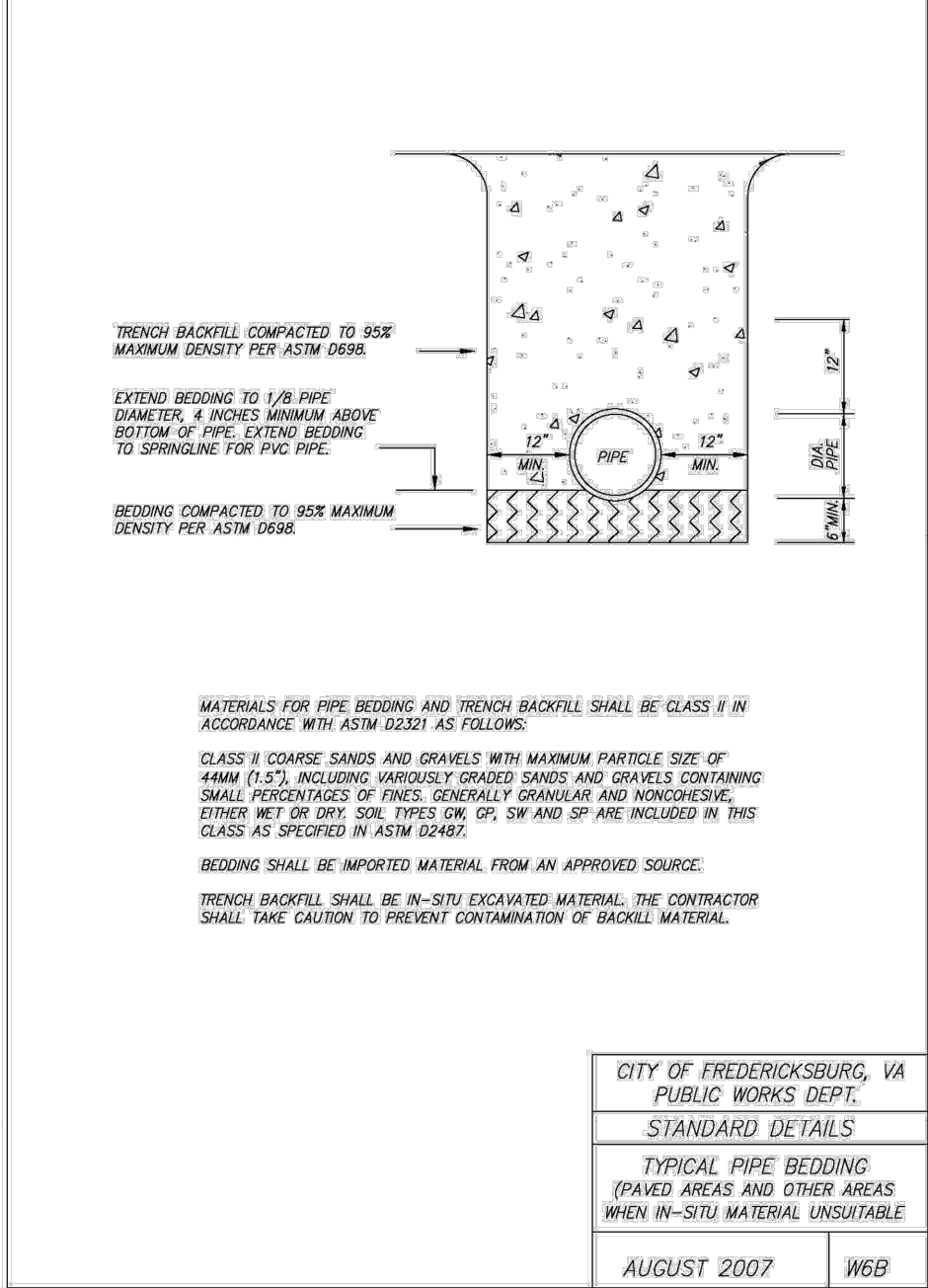
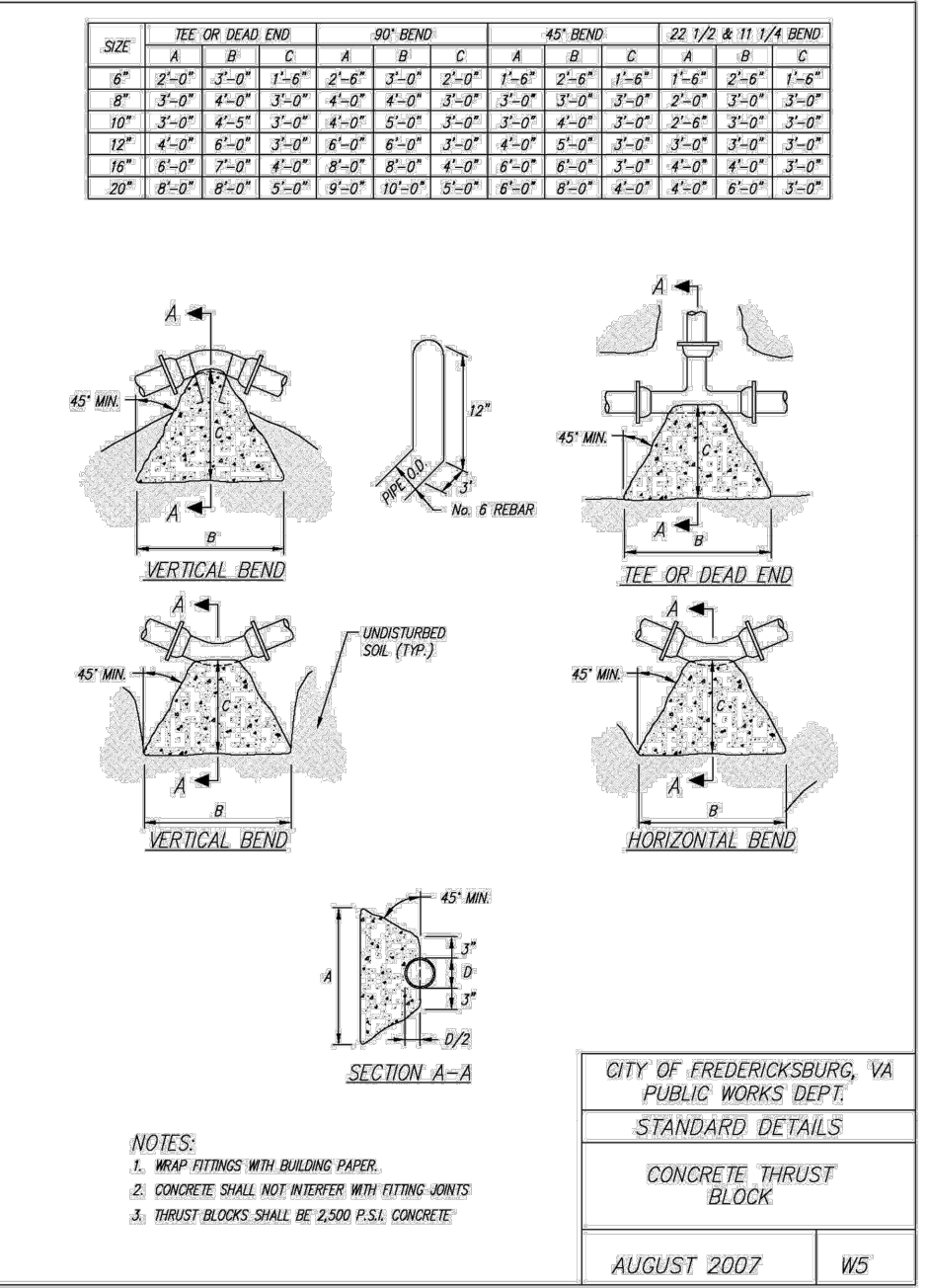
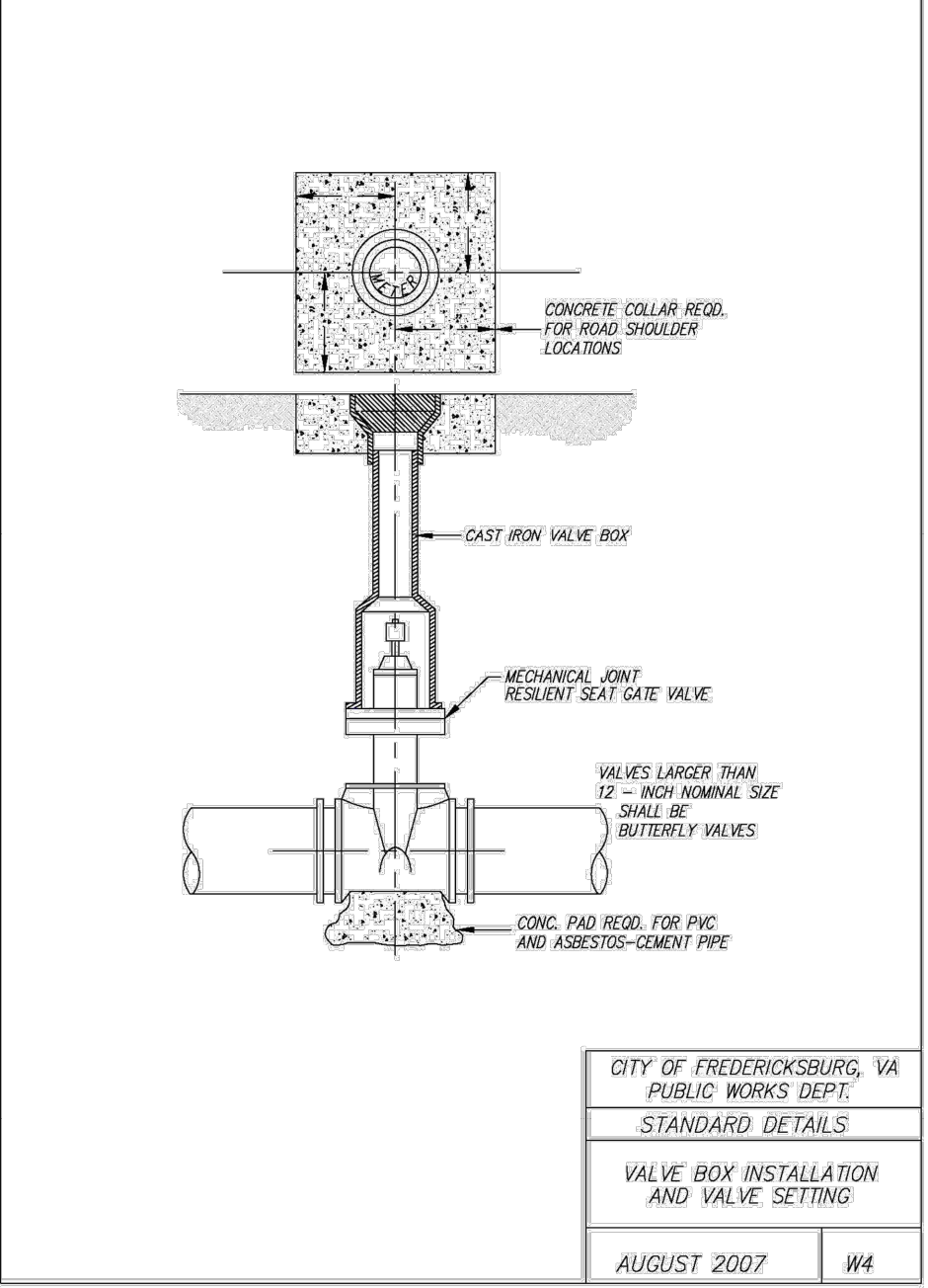
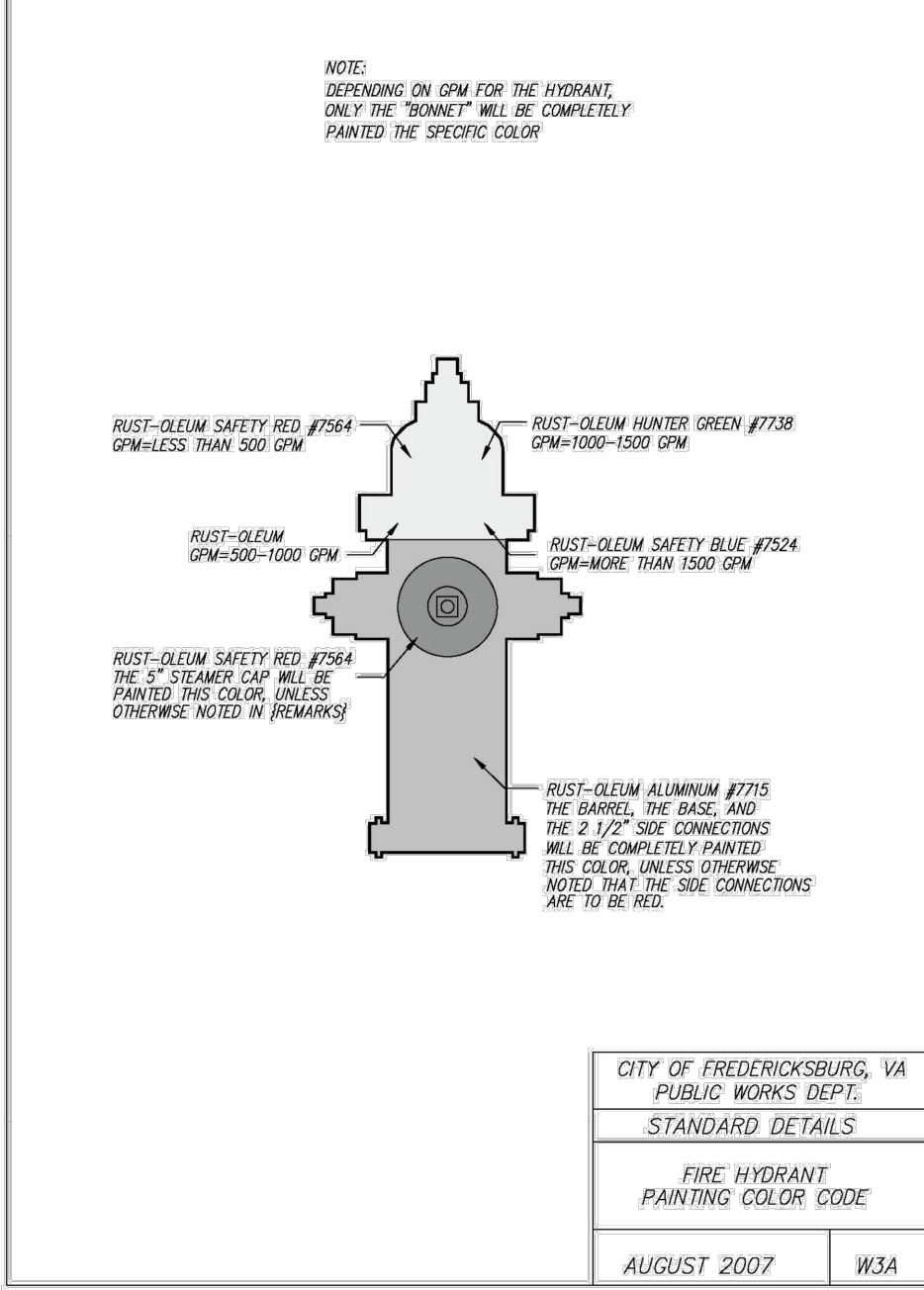
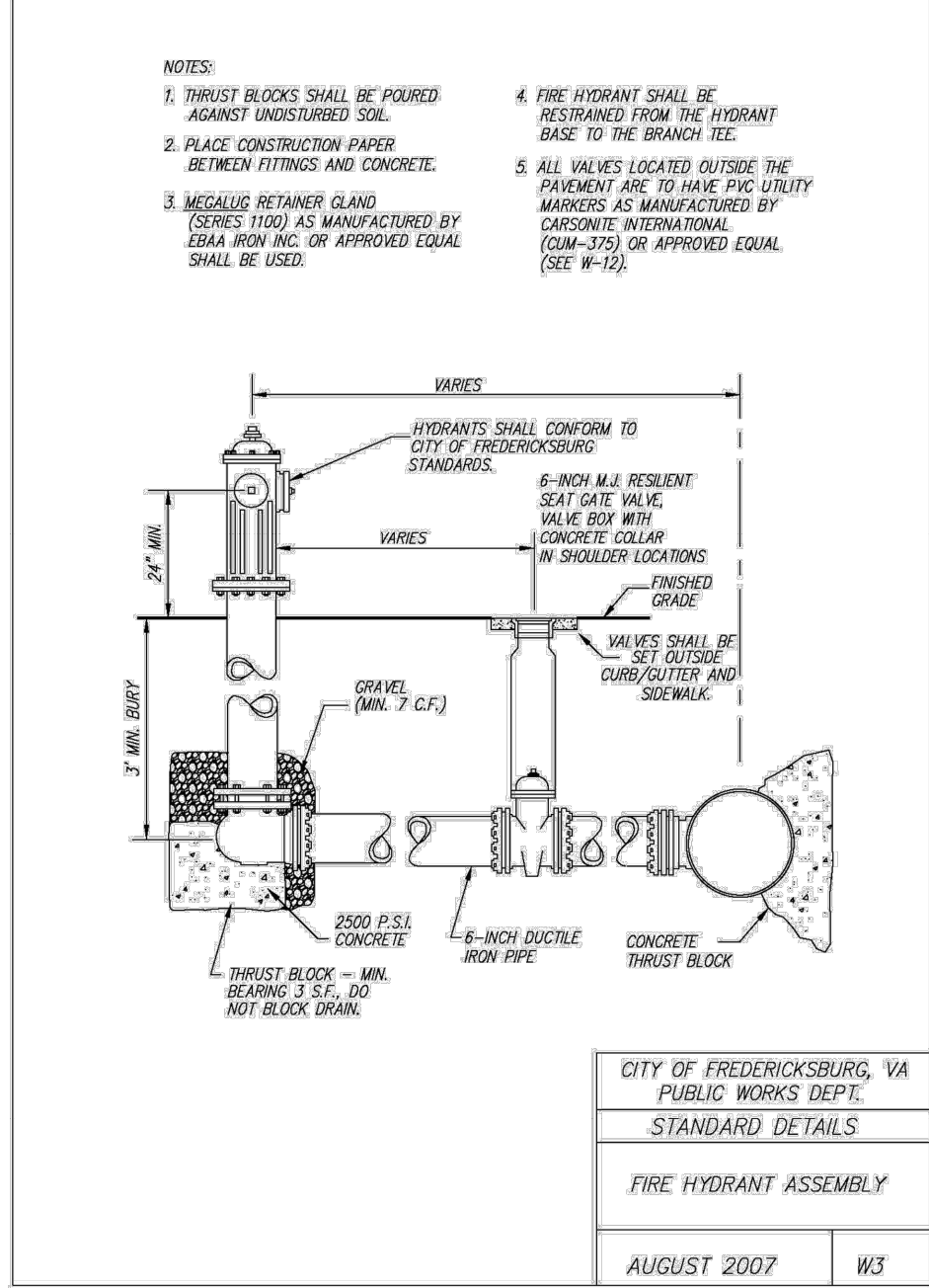
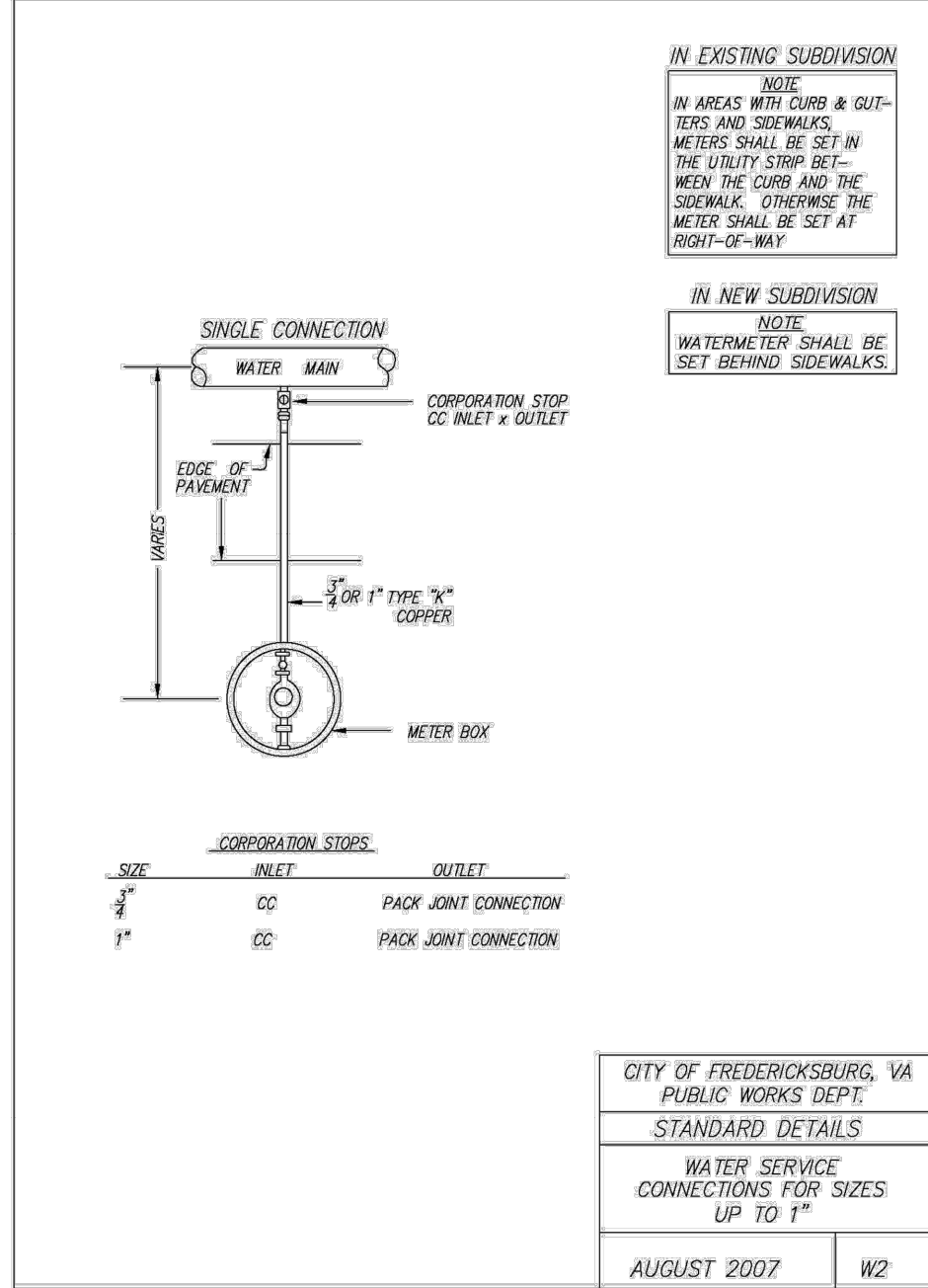
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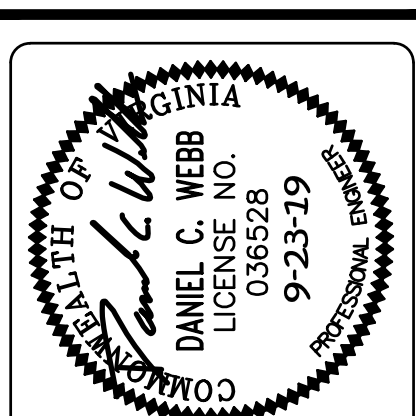
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DRAWING NO: 18-D-007

SHEET NO. 5
OF 7 SHEETS



REVISION BLOCK		DATE	DESCRIPTION
PER CITY COMMENTS	SLB	7-25-18	
PER CITY COMMENTS	SLB	8-1-18	
PER CITY COMMENTS	SLB	4-1-19	
SEWER LATERAL LOCATION	MRE	6-24-19	
PER CITY COMMENTS	SLB	9-23-19	



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OFFICE (540)371-1209 FAX (540)371-4650

UTILITY DETAILS

KENMORE AVENUE

SEWER REHABILITATION

CITY OF FREDERICKSBURG VIRGINIA

DATE:	JUNE 6, 2018
SCALE:	NTS
DESIGNED BY:	SLB
DRAWN BY:	MRE
CHECKED BY:	DCW
ACAD FILE:	<18D007FCP>
DRAWING NO:	18-D-007
SHEET NO.	6
OF 7 SHEETS	

E & S CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT INCLUDES THE REPLACEMENT OF AN EXISTING 15 INCH SANITARY SEWER MAIN ALONG KENMORE AVENUE FROM CHARLOTTE STREET AS SHOWN ON THE PLAN. THE PROJECT INCLUDES THE ABANDONMENT AND/OR REMOVAL OF EXISTING SEWER FACILITIES. THE PROJECT INCLUDES THE DEMOLITION AND REPLACEMENT OF EXISTING ASSOCIATED ROADWAY PAVEMENT, CURB AND GUTTER, SIDEWALK AND ENTRANCES. THE PROJECT INCLUDES THE RELOCATION AND RECONNECTION OF EXISTING UTILITIES. THE TOTAL AREA WITHIN THE LIMITS OF DISTURBANCE IS APPROXIMATELY 0.16 ACRES.

EXISTING SITE CONDITIONS

THE AREA IS UN-DEVELOPED AND WOODED.

ADJACENT AREAS

THE SITE IS BOUNDED RESIDENTIAL AND COMMERCIAL PROPERTIES.

OFFSITE AREAS

ALL MATERIALS RESULTING FROM DEMOLITION WORK, EXCEPT AS INDICATED OR SPECIFIED OTHERWISE, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS. THIS PLAN DOES NOT INCLUDE ANY OFF SITE DISPOSAL OR STOCKPILE AREAS.

SOILS MAP

NO SOILS REPORT PROVIDED.

CRITICAL EROSION AREAS

THERE ARE NO CRITICAL AREAS.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. & SPEC. 3.32, PERMANENT SEEDING, OF THE HANDBOOK. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING

STORMWATER MANAGEMENT

THERE IS NO STORMWATER MANAGEMENT REQUIRED FOR THIS PROJECT.

MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL SYSTEMS SHALL BE MAINTAINED, INSPECTED AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. AN INSPECTION SHALL BE MADE DURING OR IMMEDIATELY FOLLOWING INITIAL INSTALLATION OF EROSION AND SEDIMENT CONTROLS, AT LEAST ONCE IN EVERY TWO-WEEK PERIOD, WITHIN 48 HOURS FOLLOWING ANY RUNOFF PRODUCING STORM EVENT, AND AT THE COMPLETION OF THE PROJECT PRIOR TO THE RELEASE OF ANY PERFORMANCE BONDS.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE NOTED, ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS SET IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST EDITION).

STRUCTURAL PRACTICES

- CONSTRUCTION ENTRANCE-3.02
A STABILIZED STONE PAD LOCATED AT POINT OF VEHICULAR INGRESS AND EGRESS TO REDUCE THE AMOUNT OF MUD TRANSPORTED BY CONSTRUCTION VEHICLES LEAVING THE SITE. THE LOCATION SHALL BE COORDINATED WITH THE CITY OF FREDERICKSBURG.
- STORM DRAIN INLET PROTECTION-3.07
A SEDIMENT FILTER LOCATED AT THE INLET TO THE STORM SEWER INLET TO PREVENT SEDIMENT FROM ENTERING AND ACCUMULATING AND BEING TRANSFERRED BY THE INLET PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED PROJECT AREA. "GUTTER BUDDY" TYPE INLET PROTECTION SHALL BE PROVIDED FOR ALL DOWNSTREAM INLETS AFFECTED BY THE CONSTRUCTION.
- SILT FENCE 3.05-2
A TEMPORARY SEDIMENT BARRIER CONSISTING OF SYNTHETIC FILTER FABRIC USED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS. SILT FENCE IS TO BE INSTALLED AS NEEDED. THE LOCATION SHALL BE COORDINATED WITH THE CITY OF FREDERICKSBURG.

MINIMUM STANDARDS

1.5 Minimum Standards.
An erosion and sediment control program adopted by a district or locality shall contain regulations that are consistent with the following criteria, techniques and methods:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant (undisturbed) for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.

2. During construction of the project, soil stock piles shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as soil intentionally transported from the project site. (There are no soil stockpiles or borrow areas associated with this project.)

3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the local program administrator or his designated agent, is uniform, mature enough to survive and will inhibit erosion.

4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.

5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.

6. Surface runoff from disturbed areas that is comprised of flow from drainage area greater than or equal to three acres shall be controlled by a sediment basin. The sediment basin shall be designed and constructed to accommodate the anticipated sediment loading from the land-disturbing activity. The outfall devise or system design shall take into account the total drainage area flowing through the disturbed area to be served by the basin.

7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.

8. Concentrated runoff shall not flow down cut or fill slopes unless contained within adequate temporary or permanent channel, flume or slope drain structure.

9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

10. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

11. Before newly constructed stormwater conveyance channels are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.

12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodible material shall be used for the construction of cause ways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials.

13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary stream crossing constructed of nonerodible material shall be provided.

14. All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.

15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

a. No more than 500 linear feet of trench may be opened at one time.

b. Excavated material shall be placed on the uphill side of trenches.

c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.

d. Restabilization shall be accomplished in accordance with these regulations.

e. Applicable safety regulations shall be complied with.

17. Where construction vehicle access routines intersect paved public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual subdivision lots as well as to larger land-disturbing activities.

18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program administrator. Trapped sediment and the disturbed by the local program administrator. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria:

a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe and pipe system shall be performed.

b. Adequacy of all channels and pipes shall be verified in the following manner:

(1)The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question.

(2) Natural channels shall be analyzed by the use of a two-year frequency storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.

(3) All previously constructed man-made channels shall be analyzed by the use of a ten-year frequency storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks.

(4) Pipes and storm sewer systems shall be analyzed by the use of a ten-year frequency storm to verify that stormwater will be contained within the pipe or system.

c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:

(1) Improve the channels to a condition where a ten-year frequency storm will not overtop the banks and a two-year frequency storm will not cause erosion to the channel bed or banks; or

(2) Improve the pipe or pipe system to a condition where the ten-year frequency storm is contained within the appurtanances; or

(3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak run off rate from a ten-year storm to increase when runoff outfalls into a man-made channel.

(4) Provide a combination of channel improvement, stormwater detention/ retention or other measures which is satisfactory to the plan approving authority to prevent downstream erosion.

d. The applicant shall provide evidence of permission to make the improvements.

e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.

f. If the applicant chooses an option that includes stormwater detention/retention, he shall obtain approval from the locality of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.

g. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel or detention facility.

h. In applying these stormwater management criteria, individual lots in a residential subdivision development shall not be considered to be separate development projects. Instead, the residential subdivision development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate subdivision development shall be used in all engineering calculations.

i. Proposed commercial or industrial subdivisions shall apply these stormwater management criteria to the development as a whole. Hydrologic parameters that reflect the ultimate subdivision development shall be used in all engineering calculations.

EROSION & SEDIMENT CONTROL NOTES

1. Prior to commencement of any land disturbance activities, a land disturbance permit must be issued by the Community Planning & Building Department – Environmental Section. An approved Erosion and Sediment Control Plan and bonding of the erosion and sediment control measures is required for permit issuance.

2. A separate land disturbance permit or an ESC plan amendment to this plan must be submitted to, and approved by the City of Fredericksburg Stormwater Administrator prior to any off-site land disturbance (borrow / filling / disposal activities) associated with this project. If the off-site portion of the project is located within the City of Fredericksburg, additional E&S inspection fees will be required.

3. Contact the Community Planning & Building Department – Environmental Section, (540) 372–1179, a minimum of 48 hours prior to commencement of land disturbance activities. A preconstruction meeting is required unless it is waived by the Environmental Section.

4. No work may occur outside the limits of disturbance shown on the approved plans. Working outside of the limits of disturbance shown on the approved plans will result in a Stop Work Order being issued with the potential for fines being levied.

5. Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site.

6. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain dormant for longer than thirty (30) days.

7. During construction of the project, soil stock piles shall be stabilized or protected with sediment trapping measures.

8. Stabilization measures shall be applied to earthen structures such as dams, dikes, and diversions immediately after installation.

9. Erosion and sediment control measures shall be constructed and installed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. Initial clearing must be the minimum required to install erosion and sediment control measures and devices. Should either the Erosion and Sediment Control Narrative or Sequence of Construction conflict with this requirement, the conflicting portions of either will be determined to be invalid.

10. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the Senior Environmental Planner or his designated agent, is uniform mature enough to survive and will inhibit erosion.

11. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
a. No more than 500 linear feet of trench may be opened at one time
b. Excavated material shall be placed on the uphill side of trenches
c. Effluent from dewatering operations shall be trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
d. Restabilization shall be in accordance with the above Notes.

12. All applicable federal, state, and local regulations pertaining to working in or crossing live watercourses shall be met.

13. Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a disposal area.

14. It shall be the owner's responsibility to inspect erosion control devices periodically and after every erodible rainfall. Any necessary repairs or clean up to maintain the effectiveness of the erosion control devices shall be made immediately.

15. Additional erosion and sediment control measures and devices may be required by the Senior Environmental Planner or his designated agent if deemed necessary.

16. The owner shall install additional erosion and sediment control devices and measures if the Registered Land Disturber determines that such additional devices and measures are necessary.

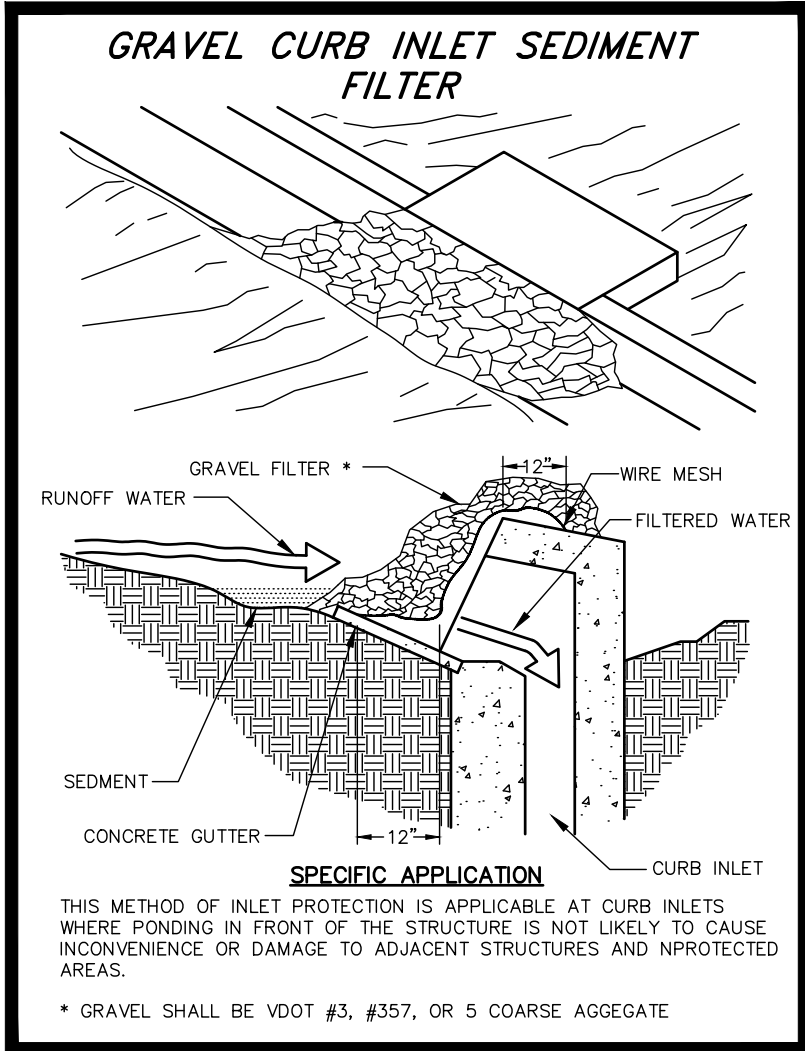
17. All erosion control devices shall be in place and functional at all times and if removed for construction progress, shall be replaced by the close of each workday.

18. Final removal of erosion control devices shall not occur until the Senior Environmental Planner or his designated agent deems the site stabilized.

19. Permanent seeding is to be in accordance with STD and SPEC 3.32 of the Virginia Erosion and Sediment Control Handbook seeding schedule.

20. Construction site operators are required to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

21. Construction site operators are required to control the transport of dust and other wind born contaminants as a result of land-disturbing, demolition and construction activities. The operator shall prevent the surface and air movement of airborne substances in accordance with STD and SPEC 3.39 of the Virginia Erosion and Sediment Control Handbook or as approved by the Senior Environmental Planner or his designated agent.



IP –CURB INLET PROTECTION

SEEDING RECOMMENDATIONS

1992	3.32
TABLE 3.32-D SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA	
	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled)
or	
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	30 lbs. (hulled)
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Sericea Lespedeza **	20 lbs.
	150 lbs.
* Use seasonal nurse crop in accordance with seeding dates as stated below: February, March through April Annual Rye May 1st through August Foxtail Millet September, October through November 15th Annual Rye November 16th through January Winter Rye	
** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.	

TABLE 3.31-B ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS 'QUICK REFERENCE FOR ALL REGIONS'	
Planting Dates	Species
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)
Feb. 16 - Apr. 30	Annual Ryegrass (Lolium multi-florum)
May 1 - Aug 31	Cornus Millet (Setaria italica)

TABLE 3.31-A LIMING REQUIREMENTS FOR TEMPORARY SITES	
pH Test	Recommended Application of Agricultural Limestone
below 4.2	3 tons per acre
4.2 to 5.2	2 tons per acre
5.2 to 6	1 ton per acre

NOTE: SOILS TEST ARE REQUIRED TO DETERMINE THE SPECIFIC LIME AND FERTILIZER REQUIREMENTS, TO INSURE THE pH AND NUTRIENT LEVELS ARE ACCEPTABLE.

NOTE: IF THE ENTIRE SITE WILL NOT BE PERMANENTLY STABILIZED BEFORE DECEMBER 1,THE RESPONSIBLE LAND DISTURBER SHALL CONTACT THE CITY EROSION AND SEDIMENT CONTROL STAFF TO SCHEDULE A PRE-WINTER MEETING TO OCCUR BEFORE OCTOBER 1.